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ABSTRACT

A workshop, Current Trends in Information Delivery, held in December 1974, was attended by 337 librarians, including Joseph Becker from the National Commission on Libraries and Information Services (NCLIS) who spoke about the national library network which NCLIS is proposing; Gerald Newton of the California State Library who spoke on library networking in the U.S. and California; and Gil McNamee, Bay Area Reference Center Director, who spoke on the proposed 17-state Western Regional Library Network. The proceedings also included two library-oriented computer demonstrations: Stanford's BALLOTS (Bibliographic Automation of Large Library Operations Using a Time-sharing System), and Lockheed's DIALOG (an on-line literature searching service). The workshop was videotaped by the staff of San Francisco Public Library's new federally funded California Video Resources Project. This report also includes a list of library networks, a list of acronyms and definitions in the field of library automation, a brief glossary of terms relating to library networks and cooperation, and an overall bibliography. (KKC)

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CONTEMPORARY TRENDS IN INFORMATION DELIVERY

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AGRIS
AIM
BALLOTS
BARC
BIBLIOS
BIBNET
CAIN
CATLINE
CIJE
CIM
CIN
COMPENDEX
COMPFILE
CRT
DIALOG
ERIC
ERIC/CLIS
FAUL
GEO-REF
IFLA
INFORM
INSPEC
INTREX
KWAC
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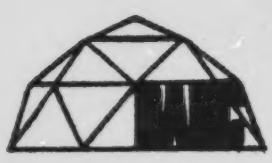

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THE BAY AREA REFERENCE CENTER
presents

CONTEMPORARY TRENDS IN INFORMATION DELIVERY

Wednesday & Thursday, December 11 & 12, 1974
Lurie Room, First Floor, San Francisco Public Library
Larkin & McAllister Streets, San Francisco, California

Wednesday, December 11, 1974

9:15--9:30	Registration
9:30--9:45	Introduction - Gil McNamee, Director, BARC
9:45-11:00	A National Program for Library and Information Services - Joseph Becker, Becker and Hayes, Inc., Los Angeles; Member of the National Commission on Libraries and Information Science
11:00-11:30	California and WICHE - Gil McNamee, Director, BARC
11:30-12:00	Library Systems and Networks--what's happening in California - Anne Roughton, Workshop Coordinator, BARC
	BARC's Special Libraries Project - Audrey Powers, Librarian, BARC
12:00--1:30	Lunch
1:30--2:30	BALLOTS (Bibliographic Automation of Large Library Operations Using a Time-sharing System), discussion and demonstration - Eleanor Montague, Stanford University
2:30--3:30	DIALOG, Lockheed's Information Retrieval Service, discussion and demonstration of terminal - Barbara West, Lockheed

Thursday, December 12, 1974

9:15--9:30	Registration
9:30--9:45	Introduction - Gil McNamee, Director, BARC
9:45-11:00	Future Trends in Information Delivery in California - Gerald Newton, Chief, Technical Services, California State Library
11:00-11:30	California and WICHE - Gil McNamee, Director, BARC
11:30-12:00	Library Systems and Networks--what's happening in California - Anne Roughton, Workshop Coordinator, BARC
	BARC's Special Libraries Project - Audrey Powers, Librarian, BARC
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Summary

An overflow audience of 337 librarians attended the December 11 & 12 workshop on Current Trends in Information Delivery. During these two days much was said about the library networks which are currently springing up all around us. Joseph Becker, a member of the National Commission on Libraries and Information Services, spoke about the national library network which the NCLIS is proposing. His talk was followed by some very lively debate--much of which questioned the basic premises which are guiding the Commission. Gerald Newton drove down from the California State Library, and gave a fine, fact-filled talk on networking in the U.S. and California.

Gil McNamee, BARC's director, had recently returned from a WICHE Institute in Colorado and told us of the proposed 17 state Western Regional Library Network. The five members from California are developing a training program to foster resource sharing through networking. The WICHE staff is now preparing a request for a planning grant which will be submitted to the Council on Library Resources. Audrey Powers of the BARC staff described how she is currently making contact with certain special libraries in San Francisco, thereby preparing the way for a possible future intertype library network in the area.

Computer hardware, from two library-oriented automation projects, was demonstrated. Eleanor Montague of Stanford outlined the BALLOTS program, and, on a portable computer terminal, demonstrated how this on-line technical processing system works. Barbara West, representing Lockheed, demonstrated DIALOG, a commercial, on-line literature searching service. She was also using a portable computer terminal.

The entire workshop was videotaped by the staff of SFPL's new federally funded California Video Resources Project.

Starting with this publication, BARC will be including all kit materials in its workshop proceedings. The bibliographies and lists from this workshop have been revised and expanded for inclusion in these proceedings.

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A NATIONAL PROGRAM FOR LIBRARY AND INFORMATION SERVICES

Joseph Becker

The National Commission on Libraries and Information Science is a very interesting organization. It's something very new in our profession; it's been in existence for about 4 years. During President Johnson's Administration, he established an Advisory Commission to the President on libraries, and a number of people - about 15 librarians and laypeople from throughout the country - were called together in Washington to deliberate about the kind of policy mechanism our country should have for developing and furthering professional interests in libraries.

That group recommended, among other things, the establishment of a permanent National Commission on Libraries, and interestingly enough, someone tacked on "and Information Science." I've tried to track that down, but I haven't located the person who did it, or the reasons why it was done. I think it comes from the realization that there are forces at work that are beyond traditional librarianship. These are going to affect our personal lives and eventually the users whom we serve. So we are a National Commission on Libraries and Information Science, and our charter covers both the area of traditional librarianship and all of the new things that are happening in the world of information. I'll come to those a little later.

The Chairman of the Commission is Dr. Frederick Burkhardt. He is a highly regarded and respected scholar in the country. There are 14 other members. Five of us are drawn from the library profession; I am one of those. There are 8 or 9 others who come from various parts of the country to represent the public interest. In addition, the Librarian of Congress serves as an ex officio member.

We got together and spent the first year trying to get acquainted with the problems that are confronting our society in our area of interest. It took a good deal of time to achieve a consensus of what we should be about. We decided, in the Board Room of the New York Public Library in June of 1973, that we would devote all of our principal time and effort and resources to the production of a national program, something that would be different from what we've had in the past. It would be our statement to the federal government and the state governments as to what was needed now, and in the short term future, in order to achieve long range objectives.

We wrote, from our experience, a brief paper which described a national program of sorts, and we issued it publicly. I must tell you in confidence, that paper we issued publicly was shorter than the one we prepared for ourselves, but we thought it was a good idea to float a skeleton document and let the profession react to it. We wanted, as much as possible, to be certain that those affected by any national program would have an opportunity to contribute to it from the very start. Consequently, we asked the national press to print it. We received comments and really hot criticism from all over the country. I would say there were thousands of personal letters, as well as statements in various journals and bulletins and professional press about what the Commission had said. This was good, because it focused professional attention on the program. Thus, gradually the document changed and became more meaningful, meatier, and more representative of the true needs and feelings of those it affected. It's still alive and well and breathing and getting fatter.

We hope by March of 1975 to have a third and final version of the national program published. It will include some 20 or 25 papers that clarify and develop certain issues contained in the document. We hope that through this process we will have put together a document that could solidify a case for new federal legislation.

We held regional meetings throughout the country. We had one here, and we heard from the grassroots. Bessie Moore from Arkansas, who's one of our Commission members, always cautions us that we want to be sure to hear from the grassroots, and we've tried to do that.

I will present to you the same slide presentation that I did at our annual ALA meeting. It's a summary of what's in our national program document. That document, incidentally, can be procured by writing to the Commission's offices, 1717 K St., N.W., Suite 601, Washington, D.C. They'll be happy to send you one or more copies.

The whole idea of a national effort, a national program in this field, is catching on, I think. Wherever I make presentations of this kind for the Commission, I sense that there is keen enthusiasm and a lot of personal motivation on the part of many professionals to see something different occur in the future. They want to take part in shaping it.

I will now step back to my slide machine and present the Commission's program. Please speak up during the presentation if the spirit moves you, and I'll be happy to oblige with responses. Let's make this more of a seminar than a formal presentation.

Our charge by Congress, and it's a public law passed by the Congress and signed by President Nixon, is to develop an effective plan for library and information services - information services and library being terms that are broadly defined in the law - to do this, not by putting ourselves in the shoes of the library or the institution, but to think in terms of the user, the average citizen who needs information for whatever purpose. It calls on us to probe adequacies and deficiencies of present information sources. It's quite specific about urging us to anticipate new technology, to recognize that computer communications, etc., are making inroads into every aspect of our society, and have already had an effect on the library as a social institution. It calls on us to determine a new federal role - what should the U.S. Government and the U.S. Congress do to promote the best interests of libraries and information services? Should they provide money for categorical aid on a block basis through revenue sharing and other means, as has been the case in the past, or should they play a new and different role? Finally, it charges us to recommend a national program, and that's essentially what we're in the process of doing.

Let me talk at more length about each of those 4 Congressional charges: (1) They asked us to think in terms of the user, the average citizen. As we listen around the country, we can see that when you talk about users and their needs for information, you can view this from various perspectives. There are senior citizens and children, people whose age is an index to the kind of information they need. There are special constituencies - the handicapped, the institutionalized, the blind, people in rural communities, the minorities, etc. There are special groups who, for various reasons, require special attention; those reasons are generally either ethnic or institutional or physical. You can view the needs for information from the point of view of purpose, whether he's seeking information for research, for recreation, for business, for government, etc. And finally, from the point of view of materials. Some want particular access to computer data, to journals, to audio-visual materials, etc.

(2) The second charge is to probe the adequacies and deficiencies of the current mechanisms that provide information and library services to people. Here you have a list of 7 or 8 basic current problems which derive mainly from regional hearings that we held:

(A) First, there are basic unmet needs. There are some parts of the country that do not have the minimum level of library services at the present time. Maybe this is widely known; maybe it is not. We recognize this condition exists, and we know that the federal government, back in 1956, started a Library Services Act that had as its aim and objective the fulfillment of basic library services to every community in the country. We don't feel that that particular objective has been fully met at the present time. There are large areas of the country that have no library service or extremely poor library service.

(B) Secondly, as part of our population growth, historically our resources, wherever they are, are unequally distributed. They're closer to the larger cities. We built libraries where people were, and today, with so much population mobility, the people may no longer be in the places where the information resides. We have unevenness in the distribution of library and information resources throughout the country, and consequently, uneven growth in terms of each state. There are 13 states that give no aid to their public libraries. There are some states that are way out ahead; Illinois and New York State are good examples. There are many libraries in the country, say public libraries, which do not meet the basic ALA standards.

(C) We sense that libraries are beginning to feel there's a limit to self-sufficiency. Many libraries in the past aspired to collect everything that was published

in their field or even in broader fields, but given the proliferation of publications and the variety of new information sources, it's virtually impossible for a library to be self-sufficient today. This suggests interdependent rather than dependent relationships.

(D) We sense too that there are pressures for change; these are in the area of economics, social changes and others that pressure libraries to consider new approaches.

(E) We still sense reservations about the new technology. There has certainly been an improvement in the last 10 years in terms of the willingness of our profession to accept technology, but there are still reservations. I suspect this is due to the romantic and glorious predictions about the effectiveness of the new technology that never have been realized.

(F) There is no national purpose. As a group, as librarians or information specialists, we don't have one particular idea in mind that we're all trying to work toward. This is what the national program is meant to satisfy, to give us all the same kind of philosophical goal to aim toward in our respective environments.

(G) All over the country there is concern about federal control - the Big Brother idea. Don't let Uncle Sam pay for something and then control what comes over the lines - that sort of thing. There is a concern also about the loss of autonomy. As soon as you join a cooperative or become interdependent and work with libraries outside your political jurisdiction, problems of autonomy arise.

(3) Anticipate technology was another charge, and here we see the 4 main technologies that are affecting libraries:

(A) A/V technology is one. You'd be surprised, but A/V materials have not yet been accepted with open arms and alacrity by all libraries.

(B) Computer technology is another. The computer, as a result of MARC, and as a result of technical developments in hardware, is being used more and more actively in conventional library situations. There are various services like the one offered by Lockheed (DIALOG) here at Sunnyvale, which provide the user, the reference librarian, or anyone else direct access via a terminal to one or more data bases that are managed by a computer at a distant location. You pay for connect time and the cost of the toll in order to get that service; you're getting sort of mechanized bibliography. These data bases are growing very fast throughout the country, and I daresay that they're now in the hundreds. In fact, in the *L.A. Times* two days ago, there was an announcement of a National Science Foundation award to Martha Williams of Illinois; she's going to develop a data bank of data banks. It's come to that.

(C) Micrographics: The amount of microfiche production that's going on in the country is mounting steadily. Last year NASA, the Department of Defense and the Atomic Energy Commission together produced 30 million microfiche. More and more companies are going into the microfiche and microfilm business.

(D) Then finally, and perhaps most impotant, new forms of communication. The voice grade lines that we've been accustomed to from telephoning are being upgraded by the commercial services to carry pictures, facsimile, and video signals with great speed, with relative ease, and with huge capacities. We're developing domestic satellites. There are two up over our country already, and many more are being planned for the years ahead. We're also developing microwave stations. These are the two changes that improve the capacity and fidelity of telephone lines. We will be able to exchange and distribute and move information with much greater ease and rapidity than we have ever been able to do before, and it won't be just voice information; it will be all kinds of information - what the computer man calls data, what the video man calls video.

Question - [Can't be heard.]

Mr. Becker - Well, there have been standards set by a small ALA group, the National Microfilm Association, and by one branch of government; but there has been no national standard developed by the profession as a whole. The national program should provide us with the mechanisms by which standards in the fields of microfiche, interconnection of communications, computers, etc., can be provided. We do not have that at the

present time, and unless we develop a good standards mechanism, we're going to have the same trouble that we're now having with micrographics and other technical fields.

(4) The final charge was what should the federal role be. When you talk about the federal role, you begin to think in terms of federal funding policy. If we look at the present federal funding policy, we notice that it's a decentralized policy. We've had programs that support college libraries, school libraries, public libraries. We have categorical aid programs that support the handicapped, that promote new services, that used to provide us with money for construction, that provide something for interlibrary cooperation. The funding policy has grown up in response to needs expressed through ALA largely. The states have received money for these various purposes, and have decided for themselves how the money is to be used.

If you look at previous federal investment, you find that ESEA, LSCA and HEA provided over a billion dollars between 1956 and 1972. If you look at public library support throughout the country, here's roughly what you find: 86% comes from property taxes or other local sources, 7% from the federal government, and 7% from matching funds from the individual states. Given the amount we spend for such purposes, 14% coming from other sources means a great deal to us. There are some who feel, with revenue sharing, for example, that we're not getting the full 14%.

The matching funding formulas are interesting to look at. The federal government, in deciding how to split up the money, uses a very simple formula. They take the state population and divide it by the national population, and that percentage of the total moneys available go to a particular state. The state, in turn, to determine its matching funding, uses its per capita income - that is, the average income of an individual within that state - divided by the national average. These formulas, we feel, need to be re-examined, because they don't provide for any catching up on the part of states that didn't have anything to begin with. Essentially, this has made the rich richer and the poor a little richer.

We find a great many weaknesses in the revenue sharing method. This is something that started in the Nixon Administration; and, I gather from reading the newspaper, the Ford Administration wishes to continue it. We believe, looking at studies made by the Treasury Department in Washington, that there's been a reduction in the overall funds available, especially to public libraries, as a result of revenue sharing. Libraries have a low priority for such money, because they compete with utilitarian agencies like the police and the fire department and the sewers and so forth, and those organizations have very realistic demands. We come out, as an intellectual agency in competition with utilitarian agencies, always at the end of the stick.

Question - Whose fault is that?

Mr. Becker - I guess we could put the blame in many places, but I think we ourselves as a profession aren't politically motivated; we don't make much noise at the local level the way a police chief does. We've detected throughout the country strong desires for more effective public relations programs, to get the word out and to get the citizens to realize the real role that libraries play in their lives.

Revenue sharing provides no extra support for extrajurisdictional systems. It's for operating and maintenance expenses. It isn't for new programs with other adjoining counties or states. The whole funding concept ignores the need for a nationally coordinated program by virtue of fragmentation of dollars to the states and localities.

There's a trend toward cooperative action - variously called library cooperatives, library systems, library consortia, library networks - cooperating with jurisdictions outside your own for sharing of resources. In Illinois there are relationships between and among public libraries, academic libraries, special libraries, and some school libraries. These are established formally by the State Library through agreement with participants under contract; and the state government, through the State Library agency, provides certain kinds of added funding to each of the institutions for the service that it gives to others. Washington and New York are other examples.

And there are multi-state groups that are getting together: WICHE, bringing the 17 Western states together; NELINET, the New England Library Network; SOLINET, the

Southeast; SLICE, the Southwest. These are groups of states that feel they can proceed with cooperative endeavors best by joining with other states, rather than going it alone.

There are library processing networks. OCLC is an example of that; BIBNET of the Information Dynamics Corporation is another. These are networks of computers and communications, not of organizations - technical networks of hardware and resources which support a great many library processing needs.

Then there are special subject networks like those the National Library of Medicine has promoted. Over the past 6 or 8 years they've established a formal network among medical libraries. They've created basic bibliographic sources - MEDLARS, and now MEDLINE. They're extending this to include drugs with something they call TOXLINE. Physicians throughout the country can either work through their medical library or rent a terminal of their own to have access to these resources.

Even with this trend towards interdependence, there are also barriers to achieving some of these aims. For example, at the present time there's a dicotomy between traditional reference services and some of these new information services, the data base services, the informational entrepreneurs that are becoming more numerous in the private sector. The user is being confronted with a multiplicity of places to go to get the information he requires, and there is no effort on the part of all of those sources of information to somehow cooperate and coordinate their activities to make it easier on the user. We have no national standards in the area of technology, even in the area of performance and collection building. We don't have a national bibliographical center, as other countries do. We have the Library of Congress' National Union Catalog. We have the MARC records, but we don't have the bibliographic center with all of the services offered from a single national organization that, say, the British have at the present time. The lack of continuing education opportunities for our profession is appalling. I don't know whose fault this is, but it certainly is an area that deserves a great deal of attention and correction. We have piecemeal planning that's going on within states. It may be going on within communities, but there is no national program at the present time, and this further deters cooperative development. Funding is uncoordinated at the present time, because we're not all focusing on one particular national goal. Consequently, good as our efforts are locally, they're fragmented when we look at them from the perspective of the nation.

The Commission's aims, after this review, were: To think of information as a national resource. To try and come up with ideas that would achieve economies of scale, that would do things centrally for the United States, paid for by the federal government, that would take a certain amount of work away from the individual library (by work we mean the routine drudgery, not professional service). To create a permanent structure for correcting deficiencies, rather than taking a look at them every 20 years. To devise funding formulas that could be mutually reinforcing, so money that's spent at the local level, at the state level and at the federal level is all aimed at satisfying or achieving a particular goal. To provide the means for coordinating public and private efforts. And then, of course, to build a framework for evolutionary planning so that whatever we start, say, in 1976 or '77 can grow and prosper.

Based on that, the national program has some underlying assumptions. First, that knowledge is a national resource, that the total library and information resource of the U.S. is a national resource which should be developed, organized and made available to the maximum degree possible in the public interest. Secondly, that all people in the country, no matter where they live, have a right to access this resource and to use it. All people have the right, according to their individual needs, to realistic and convenient access to this resource for their personal enrichment, achievement, economic advancement, etc. Third, that new technology can communicate this resource nationwide. Fourth, that a network, just like the telephone network, can incorporate safeguards to protect personal privacy and intellectual freedom. I think the Commission recognizes quite clearly that we have to build that in. Legislation, to protect our First Amendment interests, can be devised for the coherent development of library and information services which will protect personal privacy and intellectual freedom, and preserve the maximum possible local and regional autonomy. Finally,

that the economic balance between the information producers and consumers can be maintained. The rights and interests of authors, publishers and other providers of information can be incorporated into a national program in ways which will maintain their economic and competitive capability. We certainly don't want to bite the hand that feeds us, and anything we suggest in the form of a national program must recognize the economic structure on which we produce and originate materials, the way in which libraries buy them, and the way in which we and private sector interests distribute them throughout the country.

Based on those assumptions then, we came up with 8 objectives. First was to develop a program that insured basic minimum services. This means continuation of the kind of funding we've had in the past, plus special catch-up provisions to get certain states and certain localities up to minimal standards.

Second is to serve the unserved. This means those special constituencies which I mentioned before that are now partially served, and all those people in the United States who are unserved. The majority of people do not use libraries. This is viewed as underutilization by our politicians, and it's a very difficult thing to defend. We can say there's a great group that's unserved because we don't have the resources and means to serve them. That's our argument. The politicians reply that those people have been disappointed and consequently don't use us, so why should they give us further support.

The third objective is to strengthen state resources and systems. Each state should improve its resources and try to be as self-contained as possible. Extra-state interaction would be for things that the state doesn't possess that may be either in unique collections or in national collections. We feel that a national program objective should be to pursue networking as rapidly as possible.

The fourth objective is to develop manpower. We want to improve continuing education and to change our curricula in library schools - to have it more up-to-date, to have it inlcude more about the technology, about human communication, about administration, etc.

Fifth, to coordinate federal programs. There are many federal programs in Washington - the NLM, the National Science Foundation, the National Endowment for the Humanities, the National Agricultural Library, and half a dozen in the Library of Congress. Yet, they never try to coordinate their activities, because there is no statute which says that they should. Any new national program should provide for coordination of federal programs.

Sixth, to involve the private sector actively. We should make sure that the commercial information entrepreneurs are going to participate more actively than they have in the past in the provision of information to people. They should be as much a part of the national program as the traditional library apparatus.

Seventh, to establish a locus of federal responsibility in Washington. There is no one place in Washington where you can go to talk library policy on a national basis, unless it's the National Commission, and we have no operating responsibility. The NCLIS is just an advisor to the Congress and the President. The Office of Education has been a source for distributing money to libraries, not a locus of federal responsibility for managing programs.

The final objective is to plan, develop and implement a nationwide network, using the federal government as a base of responsibility.

Let's talk about each of these major federal responsibilities one at a time:

(1) To make unique collections available nationwide. There should be some kind of a formal arrangement for identifying unique collections, and then for the federal government, not subsidizing them completely, but providing them with reimbursement for the services that they provide.

(2) To develop centralized services for networking. MARC is an example of such a service, but we could use half a dozen others which would take the routine load off our individual library backs. A national periodical bank is one suggestion. There are several others. It makes economic sense to do it. We think they should be developed and supported by the federal government.

(3) To explore computer usage and to make it more widely available for library and information purposes.

(4) To apply new forms of telecommunications, microwave and satellites.

(5) To support research and development. We now have two or three sources in the national government. One is the National Science Foundation. They support programs in the area of networking in general. If you come in with a good proposal for a library or information network, you may get a grant from them; but at the present time, it's not well defined as one of their major charter objectives. The Office of Education has some money for R & D; there's some money in the National Endowment for the Humanities, and there's a little bit in the Council on Library Resources. After that the well runs dry. None of these, as I said before, is coordinated.

(6) Finally, to foster cooperation with similar national and international programs.

The state governments, the Library of Congress, and the private sector will all be needed to support whatever the federal government does. The role of the states would be to strengthen state library agencies, to plan and coordinate network development and resource development within the state, and to make a legislative commitment to support intrastate networking in return for matching funding for both resources and networking.

The advantages to the state of participating in the national network are: (1) Individuals in the state will have more information available to them than they would otherwise have. (2) It should reduce the telecommunication costs. We're looking into the possiblity of using the federal communication system for some of the telephone and facsimile transmission. Possibly with one change of an FCC regulation, we might have reduced costs just as we have had reduced mailing rates. (3) It would give a state access to computer software and data bases and technical equipment that may be developed centrally. (4) It would assure them that efforts undertaken within the state or among states are compatible with programs being devised nationally. (5) It would provide them with matching funding both for resources and networking operations.

The role of LC - A number of services were suggested by a special committee in the Commission to make it truly a national lending library. We call the Library of Congress our national library, but at the moment it is the Library of Congress, literally, and it looks upon these other things it does as secondary. We'd like to see it expand the national program for acquisition and cataloging; to expand MARC. MARC has fewer records in its data base than OCLC, because it's restricted to American imprints and certain dates today. We need to have more records in the national bibliographic data base, so we don't repeat the machine readable cataloging in different parts of the country. It should also provide bibliographic data on-line - that is, a terminal at your reference desk to use as you now do through the book NUC. Two other things - A national serials service, which it's now considering, and improved access to state and local documents.

The role of the private sector is still just a series of questions. We have met with the private sector - the publishers, the information entrepreneurs, computer manufacturers and telecommunication companies, and we put questions such as these to them: What functions are appropriate to the public sector and the private sector? What is needed to stimulate the growth of the information industry? How can the users' access to these new resources be simplified? How do we integrate the free information services which we now give at the reference desk with the fee information services that are now offered by commercial services? We hope to have an entire chapter in our next program to address these questions.

The total objective is to achieve a national knowledge network that will have a mix of materials available in it, that will deal with the humanities and the sciences, that will reach information analysis centers as well as all types of libraries, that will reach the public and private sectors and have input from both, that will utilize new technology, that will bring together programs being developed at various political levels, and that will serve education, industry, government, and, of course, the individual.

We propose the establishment of a responsible agency to coordinate activities. The proposed functions of the National Commission, within this responsible agency, would be to make a policy for the program, to continue to advise the Congress and the President, to continue to evaluate the national need, to generate new programs, and to prepare new legislation. If an agency like this did indeed get launched by the Congress, the selection of who in the government would run it could become quite a ticklish hot potato. The concerns have already been expressed.

Our remaining action is to circulate this document, to discuss it with people like you, and to solicit your comment and criticism; to discuss it with relevant groups - ALA, ARL, AAP, American Society for Information Science, CNLA, the Federal Library Committee, the Information for Industry Association, Federal Abstracting and Indexing Society, SLA, etc. We've met with school librarians, children's librarians, media librarians, with federal librarians. We're going to meet in St. Petersburg, Florida, in the middle of January with SLA. We've commissioned papers from a number of these groups.

Eventually we will write legislation. We have the bare bones of a legislative document in the Commission at the present time, but it needs a lot of work.

Before we take it to Congress, we're going to have to take it to lay groups in the United States - the League of Women Voters, the National League of Cities, etc. We want to take it to the users, to get their reactions, and to get their support. We can't go to Congress with something that the people don't want. We want to be absolutely sure that our program is fail-safe before we submit it.

Are there any questions?

Question - You mentioned that there was a lot of criticism about your program. What form has this criticism taken?

Mr. Becker - It had to do with our first draft coming across as a technical network - that is, a proposal for a big technical apparatus which wasn't sensitive to individual user needs. I think that has been largely corrected in the subsequent draft.

We didn't come out in favor of continuing the existing categorical financial aid. We didn't feel we were ready to do that, but as we went around the country we soon discovered the inequities I've described to you, and we changed our mind.

There was also some concern about our not recognizing the importance of the copyright problem in any activity involving cooperation among institutions that deal with documentary materials. We now have taken steps with the Registrar of Copyrights at the Library of Congress, and last month we had a meeting with publishers and various library groups to talk about ways of ameliorating the impasse which exists today between those two. We are very hopeful that this form of mediation will resolve the problem. Those are three that occur to me, and I think we have corrected them.

Fay Blake - This is a comment, not a question. The National Commission is, to many librarians, a tainted commission, and its conclusions and programs are also tainted. Because the information science world has an infinity with the library world, it is not correct to assume that the information industry has an infinity with, or is analagous to, the library world. Libraries, supported by taxes, are public service institutions, and their aim is to provide information. The information industry has as its aim to make a profit, and it will provide information only if ultimately the profit is in hand. That means that it's going to provide only a certain kind of information, and it's going to provide the information to only a certain kind of person, the person out of whom a profit can be made. That means that the Commission's program, generally, is supportive of the same people to whom we've already given a great deal of our resources and information. Those people who have been traditionally unserved will continue to be unserved by the networks and by the program of the Commission.

I'm not a Luddite* who wants to go and dynamite computers, and I'm not a troglodyte or a Neanderthal who says, "We don't need networks, and we don't need cooperation."

*One of a group of early 19th C. Eng. workmen destroying laborsaving machinery as protest.

But I think we've got to ask very seriously, "*Qui bono*? Who's going to benefit from a network?" Ethnic minorities, the unemployed, the poor, the aged, children, don't need at this point some of the things that the network is going to devote itself to and that the Commission's program would result in. It's a very small percentage of our population who needs to know every last article that's been written about the left nostril. What most of us, the mass of the population, need to know is available if you'd let us develop the programs of information to such categories.

The resources of the country are finite, and if the Commission takes a huge chunk of the resources - money, and talent, skill, and brains, and the rest of it - and pours it into the development of the kind of network that we've seen described here today, it's taking away resources for the development of the kind of program that most of us here in this room are really struggling with and have been for some years now.

Mr. Becker - I can tell from the way you said that that you said it from the heart. I respect it, and we've heard other comments like that. We tried, I think. I mentioned 8 objectives, and only one of them relates to the network. If you were to put dollars on insuring basic minimums, on addressing the needs of special constituencies, etc., you would find that the costs of doing what was described would be perhaps 80-20 in terms of the network doing 80% of all the things you'd like to see done and 20% to building a network. The program as it now stands represents the attitudes and opinions of what we believe to be most of the people who have communicated with us. The best way to get your message across is this way; and also to develop letters and statements, and to work with other people at the grassroots, to come forward with alternate suggestions and with expressions of opinion that will have an effect - and they will have an effect. There is no desire on the part of the Commission to promote a program that no one wants. We want to promote a program that everybody wants.

Ms. Blake - But the Commission doesn't represent us. It consists of people like you who run Becker and Hayes. It consists of the chairmen, or vice chairmen, or something of Bank of America. It doesn't talk for us.

Mr. Becker - Well, you know, I don't think you should have singled me out. I have been a librarian since 1946 and have spent my life as a librarian. I've been with Becker and Hayes for 4 years. That commercial affiliation doesn't stop me from giving my everything to librarianship or to professionalism; nor does it stop me from teaching in library schools or doing any other thing. So that portion of what you said I'll say was unfair.

Georgia Mulligan - I think what she's really talking about is politics and the nature of the librarian. I think if we really want something, we have to stop being benign people. Librarians are a benign group of people. They aren't politicians. This is a capitalistic society. We have to go out and fight fire with fire. We have to take these people you're objecting to and learn how to manipulate them the way they have learned how to manipulate other people to get what they want.

Ms. Blake - I don't think you defeat a Nixon by becoming a Nixon.

Ms. Mulligan - What else do you do though? I don't want to become a Nixon either. I don't think it's necessary to go to that extreme.

Comment from audience - I think one of the problems is that the presentation, and the report, and the summary all sound very good. Your objectives are marvelous - wonderful objectives; #1, basic unmet needs; #2, unserved; and so on and so on. But half the slide show, half the report, as far as we know, the majority of the work that's gone into it - network, network, network, not basic needs. Also the funding - when you go through the report, you look, and where are you talking about funding to meet these basic needs? You're talking about continuing categorical aid, which is completely

insufficient. It's only pilot programs here and there, some of which get continued. It's not supplementing the very inadequate, basic library money of 86% from local resources, which is essentially decreasing. In actual fact, we're getting less support rather than more. When you talk about things that still need to be done, the work with the private sector, there's no mention of the fact that you haven't really developed an adequate program for dealing with these unmet needs or dealing with the unserved. You're really expanding it rather than continuing what's inadequate, and I think this is where a lot of the problem comes in. The evidence we see of what the emphasis is, is not in accord with the objectives, which seem to have been put in because of the objections to the first draft. They aren't really supported in programs, plans, funding, etc.

Mr. Becker - That's a good statement. I think that we certainly had to get started somewhere. The notion of a network is undoubtedly a principal one in our thinking. It is the one that has had the least attention in the country, and that is probably why it received the most attention on our part. We firmly believe that networking standards are desirable, and provisions for centralized services are desirable.

The amount of money, in terms of categorical aid - I don't think that we could include that in the document at the present time. We have no way of measuring it. One of the 20 papers that was commissioned is supposed to look at the costs of various things. I hope that paper will give us a better appreciation of the scale of support that might change this balance from what I gather you both feel is turned around to the way I think it's going to be when the money comes along.

I don't believe that insured basic minimums and these other objectives were added on. I really do think, and I'm largely responsible for all the correspondence that came in, that they represent what the need really is. Maybe it was better that we didn't have them in our first draft, that librarians came forward, as you are, and insisted they be given important consideration. That does affect us in terms of the way in which we behave.

All the people on the Commission - I've come to know them now very well, and they are not capitalists in that negative sense. They want to help.

Question - I notice the Commission includes a lot of people who are interested in marketing systems services. Does this mean that some of the money is going to go to Bell Labs and IBM to support their programs, or is it going to come to libraries to do R & D? I know Bell Labs and IBM get a lot of money to develop systems programs right now, federal money, and this is out of our public share.

Mr. Becker - I think that's a good question, but if you look at the research and development programs that have emerged from libraries through the Office of Education, Title III program, through the National Endowment for the Humanities, and even through the National Science Foundation, you'd find that 90-95% of them are grant programs to institutions and not to private enterprise.

Virginia Borland - My name is Virginia Borland, and I said that I would arrange to come and give some input, and this would be representing young adult librarians. There are more than 100 young adult librarians in the Bay Area who are concerned about service to young adults - that they're not going to get much out of this sort of situation. Will you please remember young adults when you come to cut up the library dollar? They don't usually have time enough to send messages via satellite. They have to have papers in the next day. We appreciate the fact that computers are here to stay, and hope they'll do a lot for us; but there are people here as well as computers, and we want to be able to continue to serve all people. We'd like to ask what proportion, what ratio of the people will be served by this, and how much money you'll save for young adults?

Gil McNamee - I think Virginia made an excellent point, and I know the Commission would love to hear from all of you. I, for one, have written several times to the Commission.

Please do write them, and we will make sure that Mr. Becker gets a copy of every statement that was made today.

Comment from audience - I am concerned with the words that were used in your remarks when you said people are concerned that libraries are inadequately used. If we try to determine how many people there are in this country who cannot use the library and how many who use the library, and to determine what lengths we have gone and are going to serve the small group that is using the library (perhaps statistically, which is a measurable thing and is, therefore, comfortable to deal with), we would then be in a position to say that money should be given proportionately to develop library service for those many who do not use the library, to discover all kinds of patterns that will provide the kinds of information and the kinds of service that they need. That's one question that I would like a comment on.

The other is that when you showed the questions that were put to the private sector, I didn't notice a request for cooperation to standardize their materials so that we can use it. It seems to me that you are asking libraries to cooperate, that the private sector can certainly use them, and yet, that question was not raised.

Mr. Becker - Maybe it wasn't clear, but in establishing national standards as part of the program, they would be established as a reflection of the desires and needs of the profession. Once established, we would expect the private sector to cooperate. Otherwise they wouldn't be part of the program. That slide that you saw had 3 representative questions that had been posed to them, but it certainly was not meant to be an entire list. Their participation in the program would hinge on their respect for certain obligations of participating in the program, which any cooperative endeavor normally requires anyway.

In answer to your first question, this matter of underutilization generally is heard at the time when public libraries, for example, have their budgets cut, or something like that. It's the Congressman; it's the man on the city council who raises the question. It isn't one that's being raised by the profession itself, but it is one that we've discovered comes up over and over again. Why should the federal government support libraries at all when not very many people use them? What I'm saying is that we've got to come up with some kind of rebuttal to that. We can say some of the things which you did, and we can probably come up with others, but they've got to be effective reasons why we are important. Resources that are distributed throughout the country for various purposes are based on having, I hope, good support and justification for them on a priority basis.

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BALLOTS
(Bibliographic Automation of Large Library Operations using a Time-sharing System) Discussion and Demonstration

Eleanor Montague

BALLOTS is an on-line technical processing system which was developed for a single library environment, the Stanford University Libraries. It supports both acquisitions and cataloging. It's currently supporting them to the tune of roughly 90% of all the work that goes through the Stanford University Libraries. Last year we had about 58,000 new titles. That will give you some idea of the volume.

The system is run by the approximately 100 library assistants and professionals in Technical Processing as part of their everyday routine. There are 11 CRT [Cathode Ray Terminal] terminals in the library which are operated to use the automated system to do acquisition and cataloging activities. We use an IBM 360-67 computer that is on the Stanford campus.

I said a few things about BALLOTS. Now, what does it actually do? The heart of the system is a set of on-line files of bibliographic information that people in the library, and now patrons and reference librarians, can have access to by a number of access points or indexes. I've got them written down here.

Indexes / Files	Personal Name	Corporate/Conference Series	Title	Subject	Call #	L.C. card #	BALLOTS ID
MARC	x	x	x			x	
In Process File	x	x	x			x	x
Catalog Data File	x	x	x	x	x	x	x
Reference File	x	x	x	x			x
11,000 records from MARC per month; 4,000 from Stanford.							

We have a file of all MARC records that were issued by LC from January 1, 1972, to the current time. In addition, we have 3 types of technical processing files that we built to support technical processing at Stanford: In Process File, Catalog Data File and Reference File. These are generic names for types of files that we build. Obviously, In Process File reflects titles that are on order or in process by Stanford. Catalog Data File means records or titles which have already been cataloged at Stanford. And Reference File stands for reference records which are created in order to aid the technical processing people and the patrons in order to retrieve records from these files.

I mentioned indexes. Across the top I have indicated the access points which are available to retrieve records from these files. (1) There's a Personal Name Index. That means any personal name in a record is indexed, any series author, any added entry of personal names. You can get a MARC record or an In Process Record or a record which has been cataloged for any personal name reference. (2) Any word of any corporate or conference heading is an access point into the file. (3) Any word in the title, whether it's the short title, the main entry title, the added title, series title. (4) Subject heading - by LC heading in our Catalog Data File and our Reference File. (5) By call number for catalog holdings. (6) By LC card number in the MARC File, the In Process File and the Catalog Data File. (7) And by unique identification number that's added to each record going into a BALLOTS file. These are not search keys. These are index points into the file, and they were designed to support technical processing and public use of the files.

Searches against these files may be made in one index at a time, or indexes may be combined. I can say, "Find author Smith, John, and title *Analytical Chemistry*." I will then retrieve any book in the file which I'm searching that has a personal name of Smith, first or middle initial J or John, and title *Analytical Chemistry*, or the words "analytical" and "chemistry" appearing anywhere in any data that's indexed, and not necessarily in that sequence. That's the heart of the system.

I told you it's a complete technical processing system, so obviously it does other things too. We print purchase orders. We print cancellation notices and claim notices. We have not yet closed the public catalogs. The automated system on third shift, in the computer center, automatically prints catalog cards, presorted, ready for filing by catalog, and Se-Lin spine labels.

BALLOTS has an automatic claiming cycle. The time of order and number of months is indicated by the ordering assistant. The program automatically will generate a claim notice if the material is not received within the time indicated. The acquisition staff at any time can modify the length of time between claims or can reset the date that a claim was to be generated because of the dealer's report notice. We automatically notify the person who requested the material when it comes in or when it's been cataloged.

We depend a great deal on information from the Library of Congress and on their MARC information, because that is information we don't have to key in. Suppose we have a book: We have it in our hands; we have it in the Catalog Department, and we know MARC information is going to come, but it's not there yet. We have the capability of automatically having the computer do the repetitive searching every week when MARC records come in, rather than having an assistant do it.

I want to stress the point that this system has been integrated into the processing at Stanford. I told you we haven't closed our public card catalog, but in acquisition there's no longer a manual order file or a manual dealer file. The bridges were burned, and the commitment was made to the system two years ago when it was implemented. We're entering our third year of production now. What I'm describing currently exists. You can touch it; you can feel it; and I'm in the very nice position, after all these years at Stanford, of saying what is going on and not what will be going on.

In the time that I have, I have not been able to go into great detail. We welcome visitors, either in the library or in the BALLOTS development area. If any of you haven't seen the system, we welcome you. Please contact me and come down and see it.

Let me take a little time to go over the next step. BALLOTS has been developed in a series of modules over the last two years. That's why you've been hearing about it. Our modular development has allowed us to add certain capabilities in small increments, so as not to upset the staff too much, and to allow an orderly progression of implementation of such a large on-line system into the library. We have just completed implementing the last of these 11 modules.

Where are we going from here? We are currently working with 6 public and county libraries in the state of California to expand the services of the BALLOTS system. These 6 participating libraries are Los Angeles County, L.A. Public, Orange County, Marin County, Santa Clara County, and San Francisco Public. These libraries have agreed to work with us to put together a one-year demonstration project to use the BALLOTS system to gain bibliographic information. At the end of the year an evaluation will be made.

How did this come about? In the first quarter of this year, Ethel Crockett, our State Librarian, held meetings of the large segments (as she calls them) in the state of California. She wanted them to talk to one another in terms of library automation projects which were already underway, and to make future plans. She hoped this would encourage cooperation, and would cut down on redundant development in the state. The groups that she called together were the University of California, California State Universities and Colleges (CSUC), and California State Library. BALLOTS, as a representative of Stanford, was asked to join because we had an operating system.

The result was quite encouraging. We found out, when we started to talk to one another, that while we had each been developing madly, we were not overlapping extensively. You might say we had a very comfortable fit. The CSUC system had been very interested in holdings file records and a circulation system. The University of California is interested in a wide variety of things, including printed catalog cards and, eventually, spine labels. They already have over 1 1/4 million machine readable records. They have the entire MARC file; they have the University of California Union Catalog file which numbers 750,000 records; and they have the Union Serials List. The State Library was very interested in getting these groups together, and it encouraged BALLOTS as the demonstrated on-line system to put together a larger network package that would be available for testing in the state. That's what these 6 libraries are going to participate in next year.

At CLA we tried to put together a program, and we made it very clear to library community representatives there that this is just one small step. You've heard about many other networks this morning. This is just another manifestation of a network, but the philosophy in our networking approach so far is to take what is available in the state of California, *i.e.* working library programs and data bases, and put them together so that they can speak to one another. Rather than throwing very expensive programs and operating systems out the window and replacing them with an external service that's different, let's take what we've got and put it together. You can see how that concept prevails in the choice of the 6 libraries. Five of those have operating computer systems at the moment. They will be using the BALLOTS system at Stanford to gain access to bibliographic information which is already in machine readable form. They will have the option of modifying that data on-line as they see fit, and then they will receive the data from us in machine readable form, in a form which will fit right in with their existing systems. As a by-product of that, we will retain the fact that they used the book, which is the first step in putting together a holdings file for interlibrary loan purposes in the state.

These plans are well underway. There's been one meeting at Stanford already with these 6 libraries and the Stanford people. We plan to begin sometime around August. They will run in the network 12 months after that.

There are some interesting developments which aren't quite as far along, but which I'd like to mention anyway. The University of California Bib Center, located in Berkeley, is part of the university-wide on-line automation project which you heard mentioned this morning. It has some very nice, large, machine readable data bases which are currently not on-line. You can't dial up their computer and search them interactively, but they're there in machine readable form. They are very interested in working with us. If this happens, then anybody who has access to BALLOTS would also be able to cause a search to be run against the files at the Bib Center and have the answer returned in machine readable form. BALLOTS has a data base of roughly 1/3 million records. That would add around 1 1/2 million available to anyone in the state who was using the BALLOTS system or who was accessing the BALLOTS files.

The WICHE proposal is another effort to say, "There is an awful lot going on in the West, and the capability exists to link what already exists into a powerful Western regional network that will serve the purposes of a wide variety of people." The Washington Library Network has 550,000 records on-line. We have 1/3 million; Berkeley has 1 1/4 million. We should be talking to one another. That's what WICHE is about.

The California philosophy is proving to be a very popular one in the Western regional sense. Let me just repeat it to you. We do not believe that any single system or any set of automated systems pasted together can service all of the needs of the academic and public and county and special and corporate libraries in the region. The priority list would be so long that if you were at the bottom, it might be years before a single system could do the programming and testing necessary to deliver what you require. The philosophy of the Western regional library network project is to use the resources of at least two of the large operating automated library systems in the West, to build a data base of bibliographic and holdings information for interlibrary loan and cataloging purposes, and make that data publicly availably to any library in

the West. If the library wants to contract with one of these systems to provide services, each of the systems is willing to operate in that mode. If you want to take the data and run it off the system which is already operating in your state, fine. It services everybody with what they want when they want it.

Gil McNamee - I'd be very interested to hear the difference between San Francisco Public and the other 5 libraries participating in the BALLOTS system.

Ms. Montague - San Francisco Public is the one member out of the 6 that does not already have a functioning automated system. However, we would like to put a terminal in San Francisco Public Library. They would learn a tremendous amount by using the on-line system. We'd like to get their feedback.

Here are some of our plans - I speak of them as plans, because they are not firm commitments. As you know, the University of California Bib Center is printing catalog cards for the UC Libraries. We're hoping that libraries like San Francisco Public, initially, will have the ability to search our files. They won't be able to use the data in machine readable form, but if we can work out an arrangement with the UC Bib Center, we can send cataloging records to them for the cards to be printed.

Question - Now that BALLOTS is doing 90% of your work, what has it done to your staffing patterns in cataloging and acquisitions?

Ms. Montague - We're extremely lucky to have a very progressive technical processing area. Just to mention a few things: (1) There has been no firing. This was promised from the beginning, and there has been none. There has been a net reduction of staff due to attrition. (2) There's a noticeable difference in the work patterns of individuals. For example, technical processing assistants in acquisitions used to batch their searching, accumulate a pile of problems, go over them with the chief and receive instructions as to how to proceed, mark up the request slip from the faculty members, give it to a typist. All claims and cancellations that came in were handled by a single person. Now there's more spreading of responsibility among the staff. Now a particular assistant might do both ordering and claiming and cancelling. Decisions are made by assistants at the terminal. You're sitting there; you have a record in front of you. Alright, the imprint varies a little from what you want to order. They proceed with the work immediately. So there's more individual responsibility on the part of the staff member. (3) In the cataloging department, catalogers have the option of using the automated system to catalog their material, or handing a worksheet to an assistant in the pool who will work at the terminal. (4) All the people in technical processing have been trained to use the system. They have been trained to use both the acquisition and cataloging parts of the system. They now have a better feeling for the entire process. (5) There is a physical reorganization of technical processing taking place to insure a more continuous flow between acquisition and cataloging. Some activities which are normally a part of cataloging are being moved back up into acquisition - for instance, the searching.

Question - Even though you've had some attrition at Stanford, have the costs gone down?

Ms. Montague - In the original proposal which Stanford submitted to the Office of Education in 1966 (or early 1967), they stated that this would dramatically reduce the cost of technical processing. Along about 1970, almost everyone finally realized that that was a falacious statement. The costs of technical processing have not gone down. They have increased somewhat. However, we've studied costs very carefully. At Stanford we believe that, given the traditionally labor intensive situation coupled with the increasing costs of labor in the library, there will be a future cross-over point where the increasing costs of increasing staff to handle increasingly larger and complex files will be more than the computer cost. At Stanford that cross-over point is roughly 1980.

Let me rush on to add, there is a question in our own minds as to whether a single institution can continue to operate a sophisticated on-line system like this in a vacuum. Look at the current economy in buying books. How can we continue to buy books without a thought in the world about what Berkeley is buying? We can't. We absolutely cannot continue to do that. This is one reason why this is a perfect opportunity to make this proven automated system available to a larger community so that a number of things can happen.

One thing, the cost can be shared. 50% of our monthly operating cost is building files like the MARC File. Stanford is paying for that all alone. Now, there are umpty-ump other libraries who are either Xeroxing cards or typing cards and multilithing cards that are already in machine readable form in MARC. We have that file; we can make it available. We have terminals that we can install so you can get at the information. You can get it in a form that's useful to you, a catalog card in machine readable form, a book catalog. Sharing the cost, and at the same time, using an on-line system where I can find out what you're ordering; you can find out what I'm ordering; you can get my original cataloging; I can get your original cataloging. If we're smart we'll say, "Why should you have a hit and miss arrangement with me on original cataloging? This is where you specialize; you do original cataloging there, and we'll pick yours up; we'll do it." Do you know what this does to the barriers around a large private institution, around a county library system, around a state university system, around a state college? It means the barriers are coming down. It means we've got to cooperate with one another.

That was very long winded; I'm sorry. It's very expensive. We realize that. If we were to continue it alone, we question whether we would continue to run it as it stands now; but as a shared resource, the costs are going to be different. I don't have the costs. That's why I said the 6 libraries are participating in a demonstration project for one year. A convening committee of evaluators from all over the state can then look at this and say, "Well, some of the ideas were good," or "We are not on the right track." That's fine. I'm all for it.

Question - [Cannot be heard]

Ms. Montague - To answer your first question - The number one priority for people in a Western network is to get location information. This is something we're working very hard on. We will use our own on-line file structure and attach holdings, location codes, to these records. In the West we cannot hope to retrospectively convert all bibliographic data that's not in machine readable form. Let's hope that our National Library will help us on that.

To answer your second question - For this particular 12-month demonstration project, the operating costs are being funded by an LSCA grant from the State Library. For the first 12 months, these libraries will receive part of their operating costs. The amount requested will not cover all of the services they want, so there will be some cost sharing.

Question - What is the operating cost for the 12 months?

Ms. Montague - It's roughly $30,000.

The data bases that I've been talking to you about, BALLOTS' 1/3 million records, are available to anybody who has a typewriter terminal, who has a telephone with which they can dial up the Stanford computer, has a valid Stanford Computation Center account, which costs nothing to open and has an overhead cost of $1 a month. The costs of using the system are: a functional terminal rental, the telephone charge, about $4 an hour to connect to the computer, and whatever computer resources you use to do your searching.

[The BALLOTS film was shown at this time.]

FUTURE TRENDS IN INFORMATION DELIVERY IN CALIFORNIA

Gerald Newton

My objective today is to provide an overview of networking - nationally, regionally and statewide. First of all, I've come up with something from *Isaiah*, Chapter 19. It says, "They that weave networks shall be confounded."

I've gone to a number of these meetings, and they seldom define what a network is, so let me start with that. About 10 years ago networks mostly meant resource sharing devices of one kind or another. Well, that's not what I'm talking about. A new definition has emerged, which stands in contrast with the old but must include it. It's a very broad one, and it's underneath everything I'm saying today. It's "a formal organization linking libraries and information centers to bibliographic data bases, using the tools available from the computer and telecommunication technology."

I also want to tell you how to go about finding out things about networks, because you won't remember much about what happens here today. I want people to know what some of the bibles are for this type of information.

Networks are now far enough along to be called something of a discipline. There is a very thick book about them. This is the basic work that describes systems and networks around the country and how they work, how they are funded, when they were started, etc. It also includes descriptions of the various softwares that are available, the companies that produce book catalogs, the BIBNET System, etc. It is the *Encyclopedia of Information Systems and Services*. The second edition just came out a few months ago. It's published by Anthony Kruzas. It has about 5 or 6 indexes in the back.

Here is a report that has not yet been approved. It's the *NCLIS Report*. That's the National Commission on Library Information Sciences. It's being called the "Westat Report." That's the name of the consulting firm in Maryland. In a few months it's going to be generally available. This is the first try at a design for the National Library Network.

Next, you ought to know about the *Harry Martin Report*, which is a great, huge, thick thing on the legal basis for establishing a network. We have done a 5-page version of it, and if you write, we'll send it to you. He tells you how to do it, how you know what your options are. There are 5 different options for establishing a network legally. The report was prepared for SLICE. It's just been published, and already it's being circulated by network watchers.

You need to know about OCLC, the Ohio College Library Center. They publish a monthly newsletter and an annual report. The *OCLC Newsletter* keeps you up on all their news, on their statistics for the month, how much the computer was broken, how many terminals blew their minds, how many records and how many cards they produced, and also their news, much of which is very important. They also do a great annual report. OCLC is out of Columbus. We'll be talking about that a great deal today.

Here's a little monthly rag that comes out of AT/L, *Advanced Technology/Libraries*, that gives good gossip. It's kind of like *Hotline*. There's some gossip about the East Coast that you just wouldn't get out here otherwise.

A commercial outfit puts this one out. It's called *TANA, Technical Applications and News Announcements*. It's like any well put together house organ.

The *University of Colorado Occasional Papers* quite often deal with networks.

Every year the University of Illinois puts on a clinic called the Library Applications of Data Processing Clinic, and the *Proceedings* are a wealth of information on library networking.

From the State Librarian's Desk gives news on what's happening in California, what's happening with WICHE, etc. How do you get that? Write the State Library. It's free. We'll put you on the mailing list.

Now let me start with some background information on the national picture. The national picture began, in a sense, with Project MARC in 1960. MARC, as you know, is an acronym for Machine Readable Cataloging. The project was begun primarily to automate the card division of the Library of Congress. They wanted to produce cards, but as they did that, they said, "It's got to fit in the National Network; it's got to be a great, huge umbrella that can network libraries together."

The thing that came out of that project is the National Standard for Data Interchange. They said, "This is the way your data should be in the computer; this is its physical format; this is the intellectual content; this is the way we tag that data." You've got to have that kind of a standard before you can ever talk about libraries and networking through computers.

After that we incubated. We've been at that for 8 or 10 years in one way or another. What's going on is that we've had time to get over computeritis pretty well. We've developed library alliances for networking, knowing that something's coming along, particularly in the East and in the South. They've done a lot of this, of joining together in networks to do manual processes. Forget about computers and the brave new world - just manual processing. We also have had a period for computer technology and telecommunications technology to advance the software of computers. The computer prices have gone down - that is, the unit price for processing. So as technology has come along, software has come along.

The next benchmark in the national picture was the formation of NCLIS. This is the National Commission on Library and Information Sciences. Interestingly enough, this national group is going to oversee networking. It didn't come from LC; it came from ALA and the Office of Education and some maverick groups.

Let's talk about what has come out of NCLIS. We had hearings in 1972 and 1973. We had hearings here in San Francisco, and several of you came to them, testified at them. They have gone back and produced transcripts of those hearings, and they sent off this report which is a trial balloon, as far as I can tell. This is the Westat study, which is the first attempt at a national design. It's called the NLN, the National Library Network. It's just shot full of all kinds of irrationalities, problems, complexities, and we all know that it isn't going to work. There's a lot of good stuff in there too. This, I think, should be viewed as a first attempt.

Here's what it calls for. It calls for 5 levels of library networking: local; state; zone, which includes several states; regional, which includes several zones; and national. They see the national network as being structured of 5 geo-political entities. At the top of this is something called the National Library Council Agency, which would oversee the oeprations of 4 regional library support centers. Each one of these serves 12 to 14 states. We're all very suspicious of a thing called the National Library Council Agency overseeing the United States. It's just full of all kinds of problems.

Supposedly the request for information, books, serials, data bases, and the like would travel up the hierarchy until it's filled. Westat thinks most of the resource sharing that results from this network will be satisfied at least within the zones. So not much is going to be going to some great, huge, national thing that watches over us. They want to take advantage of existing networks, such as OCLC; and in the report they say OCLC could take over two of the proposed regional units - in other words, the Eastern half of the United States. They think the existing outfits, such as NELINET, or SOLINET or SLICE, might act as zonal coordinators, which contradicts some other things they said.

This report has not yet been accepted by NCLIS, but eventually what should come out of it is a national network with funds to the tune of $25-30 million to start it up. They're very skittish about what it costs to run it. The network in the study calls for approximately 4000 on-line terminals. Most would be used at the local level, and they would draw from the same data base logged into the regional computers. That's a big benchmark. It's the first attempt at designing a national library network. Again, it's shoddy; it's contradictory; it's irrational in some parts, but so is the airplane.

What's the next big benchmark? There's one coming up in 1977, the White House Conference on Libraries, and I'm sure the main topic there will be the National Library Network. A lot of other pressing matters will be covered, but I can't imagine that there won't be a strong emphasis on getting this thing off the ground.

Something else that's kicking around, which is kind of a benchmark, is the search for a new Head of Library of Congress. If they get a good one, that could change things like crazy. If the Library of Congress took some kind of leadership role, I wouldn't be talking about the theory of a national network; we'd be home free. The gossip has it that the top 3 candidates are: the President of the University of Virginia, who is a Rhodes scholar and not a librarian; then there's Daniel Moynihan, who, I'm afraid, would say, "Let's treat this with benign neglect"; and the third is the Head of the National Library of Medicine, and muy bien - they started MEDLARS and know how to do it. Of course, we're not wired into what's going on with this appointment committee. It's just simply gossip, what we hear, so I may be 100% wrong.

That's what's going on nationally. There's still nothing that's being practiced, and I think it will probably be 3 to 6 years before there's something that's implemented nationally. Are there any questions about the national picture?

Question - I'm interested in that figure of 4000 terminals. That seems like a small amount for a national network.

Mr. Newton - The idea is that most of the work will not be done by local libraries - you know, up in Quincy, Shasta, and places like that. They will be linked to larger units, such as information centers that own the on-line terminals.

Question - For example, in San Francisco, would there be one terminal?

Mr. Newton - We know there'd be more than that; BARC would probably have 4.

Question - What's an on-line terminal?

Mr. Newton - An on-line terminal is a terminal that is connected directly to the computer and gives an instantaneous response, so that if you go in and say, "Show me all the books on the philosophy of the Western civilization that have been published since 1960," it will immediately start putting that information on a cathode ray tube. An off-line terminal does not give an instantaneous response.

Now I'll start talking about the regional developments. Regional becomes a discussion of the East and the West, so let me break it up that way. The reasons why the eastern parts of the United States have done it are many and complex, but they're always common-sense things, such as their institutions are older. There's geographical proximity. They're very close, and we're very far apart. Their funding methods are generally different from ours. We're usually funded at the local level, and they are funded at the state level. If you get funded locally, you get very independent; we found that out up there at the State Library, and it's very difficult to coordinate people who have their own money. I've been to a few meetings where - well, for example, Washington State libraries are funded by the state out of the State Library, and man, they're all very cooperative! It's a whole different world. So the East has this longstanding tradition of regional cooperation, and for them, computer technology has been simply a natural progression, a natural extension of what they've been doing for years.

Here are some of the benchmarks in regional networking in the United States. One of the most important was the appointment of Fred Kilgour as Head of OCLC in 1967. Fred was brought out to Ohio by a consortium of academic libraries to tell them how to do it for bibliographic control. He did a report that suggested they centralize computer operations, that they proudce catalog cards out of the operation, and so on and so forth, and they hired him. He left Yale Medical and set up OCLC.

One thing I want to mention about OCLC. I find that people fall into one of two categories about it. They're either zealots with almost a missionary kind of zeal, or they're very hostile. There's a great deal of misinformation around concerning it. For correct information, there is a free phone number to call at OCLC. It's 1-800-848-0350. Ask to talk with Stu Bebtenham. He is the Assistant Director and has all the facts, and will give them to you.

Here is some straightforward information that's up-to-date as of this week. OCLC was established in 1967. It was chartered by the state of Ohio as a nonprofit corporation. The operational and developmental funds are provided by: member assessements, which may change this year; a member use fee; grants from the Council on Library Resources - CLR has dumped almost $4 million into the operation, and this support is continuing next year; large federal LSCA grants; and other miscellaneous grants.

In late 1973, the system linked to other states, after saying they wouldn't do it, and they're mostly in the eastern half of the United States. The reason for this is that line charges are very high. It just was not practical, until about 4 months ago, to hook onto OCLC from the West Coast. Then came what's called a high-low tariff rate that was set up a few months back, and it's changed the picture considerably.

The system operates from Columbus, Ohio, using a system owned by Xerox, a Sigma 5 computer. They have two Sigma 9's on order that they are going to own, and delivery on those is expected in early 1975. One of the disadvantages with their computer is that they've gotten in there with a soldering iron and rewired it for library data handling. It was what was called a word machine. They worked it over to where it's a character handling machine. It's very fast; it's slick; they keep the cost down. Unfortunately, Xerox will not service that machine, so there's an element of vulnerability. That's overstated; because of that element of risk, they're very careful. They have very little down time, less than 1%. So it's an extremely reliable system.

OCLC presently supports 300 terminals in 240 member libraries. With the addition of SOLINET, 105 libraries in 10 Southern states are to be added starting December 1, 1974, through June, 1975. So they're adding another 150 terminals. By July, they expect to be up to around 450 to 500 terminals on system.

The present membership includes: NELINET, the New England Library Network, which is 32 libraries (by the way, for every one of these I name, there's a dope sheet; if you want one or more, let me know and I'll send copies); SOLINET, the Southeastern Library Network, 105 libraries in 10 states; PALINET, the Pennsylvania Area Library Network, 7 very large libraries; FAUL, Five Associated University Libraries (New York); IUC, the Inter-University Council of the North Texas Area, 14 Texas libraries; PRLC, the Pittsburgh Regional Library Center, 26 libraries; SUNY, the State University of New York System, which is now plugged into OCLC; FEDNET, the Federal Libraries Network, 16 federal libraries; the IRRC, the Illinois Research and Reference Center Libraries, 5 libraries; and back in Ohio there are 65 member libraries represented, both academic and public and a few special.

What they provide out of OCLC presently - first, a thing called data base maintenance, which is simply being able to create a bibliographic record in the computer, to change it, and/or to delete it. Second, they provide an output product, which is card catalogs, and they have a provision in the system for going in and editing the data that you see on the screen so that you get a tailored output for the system. They punch a button; then they make the cards that night and ship them to you. They also provide record display. These are very pompous things. It shows a picture on the screen, and you can retrieve the data that's in the system, get this record display by using the LC card set number or something called the author-title search key. You put together a bunch of little codes, if you know the author and title, and/or a title search key. You don't key in the whole title. It's what's called an algorithm. You can flash a record on the screen to find out who has it for interlibrary loan purposes, but this is not an interlibrary loan system. In California we want an interlibrary loan system. They can't do that, and that is not presently one of their priorities.

What doesn't OCLC do? It does not interface with other systems. Here in California we want to take a bunch of incompatible systems that have been developed for years and put them together so they can all interact. OCLC is not in that business yet. Presently you buy it as is, off the shelf. You take OCLC, put a terminal down and go. It doesn't hook in with other systems. This requirement may be overstated, but we think we want to do that. We're testing it now. OCLC does not principally provide for subject searching. It can't go in, like DIALOG, and search by subject. It was not started with that as one of its high priorities.

What are some of the things they're doing that we in California will be doing in the near future? A serials control system is presently being field tested, and it's scheduled for implementation throughout the system during the first quarter of 1975. It's been running for a good 6 months now. It doesn't have a claim module that's operating yet, but they hope to have that in '75. The spine label module is scheduled for operation during the second quarter of '75 also.

Both the Library of Congress and CLR are presently negotiating with OCLC for an OCLC-based experiment which would create a national serials data base. That's called the CONSER project. Here again is a case where LC does not provide us with a national serials data base in a MARC serials format. So a maverick group was formed. They met this year, and California was represented. They said essentially to LC, "Look, if you aren't going to do it, we've already done it, and we're going to do it." So LC said, "Well, do it, and maybe we'll give you some money." So the Council on Library Resources and LC are both funding the experiment. The basis for the data base is going to be the University of Minnesota's serials data base, which is already in existence. It's in a MARC II format, and it's just as clean as can be. They're now looking around for other data bases to add to that. LC will have terminals. They'll be hooked into Columbus, Georgia, providing input to what may become the national serials data base. CONSER is presently funded for, I believe, 18 months on a trial basis.

OCLC is now tending to shift priorities because of the pressures of having roughly 300 customers. The first new priority they have is subject searching, and they expect by the first quarter of 1975 to be able to provide their libraries with this service. The next priority - originally it was no priority - is interlibrary loan.

OCLC's data base has slightly over one million records. In September, 1974, their monthly card production reached one million cards, which presumably is about 150,000-160,000 sets.

OCLC is our oldest and most successful interstate computer-based library network. They're an important development, and we're holding them out as one of our options for California. We do know in California that it's inevitable some libraries will go OCLC. They're already doing it. In any case, whether or not we adopt that as our standard software for California, we want to have the capability of interfacing with it.

Anne Roughton - Please define software and interface.

Mr. Newton - Software refers to the programs that make it work, the computer programs. Interface has to do with the programs that are working to get incompatible programs or computers to talk to one another. A rough analogy is - down in Orange County, their computer speaks Russian, and mine speaks Chinese, so they've got to get an interpreter to get them together.

Now let's talk about the Western half of the United States. As a group, we have a history of roughly 5 months standing; 17 Western states have formed into a Western Regional Library Network. It's being coordinated by a group called WICHE - that stands for the Western Interstate Commission on Higher Education. Why would we go to a thing called WICHE, when we could just do it? Well, we can't just do it. I've been in Sacramento for 2 1/2 years, and I can tell you it's really a mind blower. Anything you want to do you can't get done. So what you need to get around that is a thing called an interstate compact, which overrides all of the local laws that stop you from moving forward. If it were up to California to put together, say, 17 Western

states - there's no way we could do that. I'm going to have to have special legislation introduced in the legislature for me to do some things - infinitely simple, cheap things. The WICHE group is a way for us to get it done.

Well, what happened with WICHE? In July they appointed Maryann Duggan, who was the former coordinator of SLICE, and she said, "The direction I'm going to take with this baby is to coordinate all of the Western states into a library network, get them to start talking. In fact, we'll even plan for it - honest-to-goodness administrators doing things." There's Duggan doing her thing.

Representatives from each of the 17 states hustled off to Denver, and agreed on the need for a new interstate network. Some of my friends said, "OK, who are they representing? They aren't representing anybody I know, including me." Well, they were the state librarians mostly, and they have federal bucks to bankroll this baby. There were other people there also.

So they met, and they agreed they wanted to start an interstate network. That's the first point. They then agreed that they would produce for the Council on Library Resources a proposal by January, 1975. Nobody but Maryann Duggan would even try something like that - a multi-million dollar proposal in 3 months. But we did it. I went to two of those sessions.

What they did at Denver was to set up 3 task forces: a management task force, a technical task force, and a statistics task force. Their job was to produce the information that would result in a proposal going to the Council on Library Resources. The management group dealt with the legal, organizational and financial problems of getting it done. What's the legal basis for this baby? How should it be organized? Should it be an independent operation, under the laws of some particular state? Where do you get the money? How much money? The technical group dealt with the service needs - the software programs, bibliographic standards, hardware facilities that could be used. The statistical group dealt with the legwork for getting all of the kinds of statistics the other two groups needed.

Initially the system will combine the abilities of Stanford University's BALLOTS system and the Washington Library Network systems into a network to support library services for their members. Now, you need to know that up in the state of Washington, the State Library at Seattle got $1.2 million of state money to develop their own computer system to link their libraries together.

The western state library network group submitted questionnaires to public libraries, academic libraries and state libraries back in October, and asked them what their priorities were. They said their top two priorities were interlibrary loan support and any of the things that can come from getting bibliographic data into machine readable form. So these two services will initially be provided to the whole network group. Strangely enough, they're not too interested in getting catalog cards, because they can get them elsewhere. But since the system already provides those other things, producing catalog cards, acquisitions, some accounting - you'll get those gratuitously, so don't worry.

They're asking CLR for the money in January. Down the line, they say, the operative funding for the network will be provided from member dues and use fees. We're also pitching to get our hands on federal money to defray the expense of the network when it's operational.

If any of you are hardware watchers, the network is being supported by an IBM 360/67 in California on the Stanford campus, and the 360/75 in Washington. They're both currently being upgraded or replaced by System 370.

The system will be supported by 3 bibliographic centers. The first one is the PNBC, the Pacific Northwest Bib Center. It includes 5 states plus British Columbia, and is located in Seattle. They have a huge data base up there. They're on cards, a big card file, a big union catalog. The second is RMBC, the Rocky Mountain Bib Center, for research. That's 8 Rocky Mountain states. The third is the California Union Catalog, which is one of my shops at the State Library.

These 3 major bib centers will be converting their data into the computer and providing information services out of it. We have been directed to immediately begin

interfacing, connecting together the 3 manual systems as they now exist. In this proposal that's going to CLR, money will be requested to hook the 3 together manually, first of all, because there are just huge organizational problems and money problems.

That's what's going on with the WICHE group. They're coming along, and they expect that the two computer systems, the one in Washington and the one here in California, will be able to talk to each other by 1976. If BARC were to have a terminal here and looked up a particular book with the BALLOTS group and didn't find it there, it would immediately fire up to Washington to see if it's in their system. If it isn't, then they immediately generate a note to the people here to look in the manual file, given certain conditions. That should be rolling in 1975, the establishment of a 17-state network here in the Western United States.

Let's talk about some of the things that are going on here in the state. I've told you about the East, and I've told you about the Wsst. Now I'll focus on California. Before I go on with this, are there any questions about the regional thing?

Question - What's the California Union Catalog?

Mr. Newton - The California Union Catalog is the oldest union catalog in existence. It was established in 1909. It is maintained by the State Library. It has 2 1/2 million cards in it. We receive 30,000 cards a month, which represents something on the order of 5,000 unique records. That is, for every card on file, there are 6 libraries which hold the book. People all around the state, particularly public libraries, send requests to us to find out who has a particular book.

Question - How complete, how comprehensive is it? How many libraries participate?

Mr. Newton - Presently there are 85 libraries, including Stanford, who submit cards to the catalog. I have the sinking feeling that the withdrawals are really bad. I also feel that manual card systems are a thing of the past, because you just keep losing ground, and the searches are either feast or famine. It's extremely difficult to control that operation. I feel that we must make it computerized, machine readable. We need to rethink the whole thing as to who the participating libraries are; how to get your union card into the blasted thing; how to get out of it.

Now, we're focusing in on California. The state's history began with a number of pioneering efforts. They didn't know they were doing anything for a network, but it ended up happening that way. It's happening at these outfits - Santa Clara, Orange County, L.A. County, L.A. Public, etc. They pioneered a bunch of systems. These cause some problems, but they're also going to help us one hell of a lot.

The next big benchmark that's identifiable is a thing that CLA came out with a few years ago called the California Network Plan. It showed a kind of commitment, and it was a hell of an important commitment. The librarians have said that's what they want to do, and they're putting aside a few dollars for that - this business of linking libraries together to get greater access to books.

Then comes the dog and pony show that I went to a few years ago. The State Library and someone over in Nevada put on a workshop that went on the road, dealing with the topic of networking. There were a lot of testimonials, and again, I thought it was kind of important, because it showed a direction and a commitment to a notion.

The next important step was the establishment 2-2 1/2 years ago at the State Library of an honest-to-God automation program which wheeled me into that operation. From the very beginning, I had been told, "Whatever you think, man, think networking." So I've been doing that, and let me tell you very quickly about a couple of the things we've done. There's a union list of periodicals project that's going. We have 300 libraries in that union list now. We have 350,000 holding statements, 35,000 titles. We're now beginning to add 400 special libraries. By next July we'll be up to around 700 libraries. It is the largest data base in the country on periodicals. How dirty is it? It's pretty doggone clean. We brought it out in its first version in microform, and this week we're getting the hard copy. We have people daily updating that

data base. While all of this is going on, we're going back and cleaning up everywhere we can. We have the ISSN numbers in there. We're in close touch on this CONSER project. It's established some credibility; it works; it runs, and it's going to stay running. It will be available on-line within the next year.

The next thing we're doing at the State Library is literature searching. We're using: DIALOG, a Lockheed system - we go in to search several data bases that they have; the ORBIT system which comes out of Southern California; TOXLINE, back in Bethesda, Maryland; SPIRES, which is down in Palo Alto. I don't know whether this will be a huge success or a complete bummer. We started it too fast. We didn't lay enough groundwork. We don't have enough staff for what we ought to do with the thing. It's very sketchy. We're sometimes elated and sometimes thoroughly furious. We've now formed an information retrieval group to go over all of this and establish policies, ways to evaluate it.

Those are some of the things now at the State Library. Next, we want to develop a network to handle monographs. I'm going to tell you about what we're doing there, because it's got a whole bunch of pieces, and they all have to mesh together. Getting a network running in the state is an extremely complicated problem.

First of all, we've established a thing with the ridiculous title of the Intersegmental Task Force, and we call it that, because the people in Sacramento who say "yes" to the money understand what an Intersegmental Task Force is, even if we don't. It includes representatives from the universities, the state college system, independent colleges, the community college system, and public libraries. Public libraries need more representation than they presently have. We do not have a special library representative yet, but we're getting one. This Task Force that is trying to hash out specifications - when we want to do things, what to fund, etc. We established the group last summer. We've had about half a dozen meetings. We try to meet monthly.

This is a 3-tiered organization I'm telling you about. Underneath the group of policy makers is a group of people who do administrative planning to figure out what the priorities should be, what things we should implement, how to go about funding it, etc. I'm in that group. Underneath that we have a third group that rolls up its sleeves and gives us specifications. It's called the Specifications Task Force. Their next report will present a list of abbreviations for libraries in California. They will also evaluate whatever computer system we use. I'm in charge of that one. They send reports up to the middle group which gives the kind of commitment that's needed at the administrative level, and then they kick it up to the top group that can have clout, and if legislation is required they can go do it.

Question - Are you funded now? Who pays for your travel, etc.? Is this federal?

Mr. Newton - Yes; it's federal. It's LSCA money that's been set aside for the automation project. That's just for people at the State Library. The meetings are North and South.

OK, so there's the ITF group that's got a bunch of people trying to coordinate it. We've also established a Public Library Automation Group that I call PLAG* [*NB* - Mr. Newton pronounces it "plague"], but my boss doesn't like that. We held one meeting at Sacramento Airport to get people together to start ironing this out, because this other group is not the kind of thing that can do that. We will have a meeting probably every other month, and the group will be feeding information to the Intersegmental Task Force, the clout bunch.

Another thing we've done is make a selection, at least a tentative selection, of the computer system, which you already know about, BALLOTS. We're going to be using that over the next year for initial testing. We have awarded LSCA money to 6 public libraries for testing this interface, getting people who are incompatible to where they're compatible. The 6 are: Orange County Library, L.A. Public Library, L.A. County Library, S.F.P.L., Marin County Library, and Santa Clara County. They all have something going, and they not only will be testing this business of being

able to interface, but also in generating catalog cards, acquisitions, and all the other things that go along with it. The money's been given. It should be going here, I suspect, in mid-1975, although Eleanor Montague, who will talk to you this afternoon, will deny it.

We are considering the possibility of an award to the University of California to do comparative testing on the OCLC system versus the BALLOTS system versus the BIBNET system, which is a commercial system. It's a request for $100,000, and we think it could be cheaper than that. I strongly suspect that they will get that award, because we do want the comparative testing before we sign up for some final software and commit ourselves to BIBNET or whatever. We want to be very careful.

Here I stand and make a half hour pitch for OCLC, and then I say, "We're going BALLOTS." The reason why is that the people at OCLC just cannot deal with this interface problem we have. The people at Stanford are hungry, and they've got a great system, and they say, "Yeah, man; whatever you guys want we'll do."

The architecture of the BALLOTS system is quite different from OCLC's. The file structure is such that if the acquisition portion blows, everything else runs - circulation, this, that, and the other. At OCLC that's not true. They have a highly integrated file design so that if any little piece of it blows, the entire system is out. They don't duplicate any of the data in any of the other files. It's a single organic type of operation. The risk factor is much higher. Another big difference is the priorites that they have. OCLC is not into acquisitions and such. That was one of the very first things implemented with the BALLOTS system, and it's been working for a long time. It's a proven system. BALLOTS was also sort of a son of SPIRES, which is their literature searching system, and that's been working for a long time. They don't have that at all at OCLC. So the purposes, the needs that each system fulfills are quite different. Looking at the needs of California and the Western half of the United States, it appears as though BALLOTS is much more responsive. For these reasons, we've gone that direction. However, we're holding lots of options, like OCLC, if BALLOTS is a bummer, and we all understand that. It's written in the contract. We've made no long-term commitments. We're going to be testing and evaluating.

Beyond that, there are some political things about it that I really like. We're very insular out here, very provincial, and I find it's much easier up and down the state for me to sell something that's a home-grown product than a system out there in Ohio. It's not all rational. A lot of it's more psychological than logical.

We have awarded $190,000 to the Peat, Marwick, Mitchell & Co. consulting firm to provide us with a developmental plan for public libraries in California for the next decade. I think everybody has heard about the PM&M study.

Essentially, it breaks down into two parts. One part says, "What is it they were trying to do for the past 10 years?", and evaluate it. I'm not quite sure what they were trying to do, and that should be an interesting study. The other half of it says, "Look ahead over the next decade, and tell us what we ought to do. Go out and find out what people think we ought to do, fit it into the national picture." This is an important benchmark for networking, because the answer they're going to come back with, one of the answers, is "You ought to network, and these are the ways you can do it; here are 2 or 3 plans." I think they'd be crazy if they came in with a single plan, because we don't want that. The PM&M study is an important benchmark for networking here in California.

The next big important benchmark is an HEA [Higher Education Act] meeting that will be held here in San Francisco next June for one week. It's being coordinated by Carmela Ruby of our shop at Sacramento. A very large group of librarians (a minimum of 100) here in California will get together to take the PM&M study, go through it, figure out what we ought to do, and make recommendations on where California should go in the next decade, including networking.

I hope you can see this is one big organic thing. We're moving on all fronts at once. We have application things going; we're getting groups together; we're getting software together; and this is all going to start happening in 1975.

Question - When we discuss networks, it seems as if statistics are always an important part of it. In dealing with the people who actually have the clout, is this important? Do they look at statistics?

Mr. Newton - They sure do, particularly statistics concerning money. If you tell people there's half a billion dollars moving through California's libraries annually, they start listening. That means something to people who are up on top. They know immediately you're not talking about nickels and dimes, that you're talking about something important.

Question - You said you were going to talk to a Councilman or a Congressman about funds and getting legislation. I was wondering - how many lobbyists do we have for libraries in Sacramento that work on that kind of thing?

Mr. Newton - Well, librarians are not practiced in the art of politics, and honest-to-goodness, you talk to some state librarians, and their idea of politicking is to have the wives of the new state senators in for a tea once a year, that kind of stuff. It's really outrageous. We are not practiced, but we're learning. We haven't done it. About the only lobbying that's being done is by CLA.

Let me go on and speculate a little bit about the future. I'm not going to do too much of that kind of thing, because it would have me upstaging the PM&M report. First, I think our union catalog at the State Library will be profoundly changed. I think it will be much better, and it will come out quite different from what we have now. The other bibliographic centers I mentioned are fully independent. I'm not so sure that the most effective way to run a union catalog is at the State Library.

I think that information centers, such as BARC, will provide a whole new range of services. I think that they will be profoundly changed. They don't know what their role is, and it's hard to say what it's going to be. I think we could say it will be tougher. I think easy questions are going to be answered back at the libraries, and you're going to get the really tough ones. I think it's going to call for a much higher level of expertise to field some of those questions, and I think the volume will be huge.

I think the present system structure throughout California, the 21 big system centers, will be changed. I don't know how, but instinctively I feel their functions will change. I think that computer terminal is really going to affect you. I think that many libraries in the next 5-10 years will have their own terminals, doing card production out of them, as we are starting to do. They'll be doing accounting and acquisitions. This stuff is here and now. It's not theoretical. You know, you can go into Stanford's SPIRES system for $3.50 an hour. You pay $80 for a dumb terminal. For a relatively cheap cost you don't need to look in the National Union Catalog or anything else. You go right in; they load it up with MARC tapes down there, and they have all of Stanford's data base in it. So these aren't theoretical things. My lord! This is here and now.

I think we definitely will have to develop new mechanisms to pay the costs of interlibrary loan. Three good studies have been done recently, and they're consistent in this. They discovered that most large libraries lend out 10 times as much as they take in, and they just can't afford to do that anymore. The more successful they are, the more they fail.

I think that new methods will have to be developed for resource sharing and document delivery. They're going to have to come up with something like they've done in England, the National Lending Library. The man who runs it gave a pitch down at CLA a couple of weeks ago. It's called the Boston Spa Operation. They have centrally located all the best journals, and no one buys them then. The publishers all go cuckoo. That outfit guarantees that they will give you same-day or one-day turn around. At the State Library my periodicals budget blows the entire book budget. I cannot buy books. I know that these fracture lines are appearing everywhere. God! What I wouldn't give for some central place that would give same-day service by just Xeroxing

that article and shooting it back. I think this is especially true of the more expensive subscriptions, the $600 jobs. I think that's going to happen.

I think that we're going to have to improve document delivery. If the item doesn't come in 3 weeks, who needs it? So we're going to have to go into things, such as a new group called SALINET, the Satellite Library Network, being formed out in Denver, using satellite technology to bring costs down even more, and allowing you to stretch out further than just our region here. I think that's inevitable. They've been doing that around the rest of the country for 15 years.

Finally, I want to speculate about the processing centers that offered so much hope 10 years ago. I think they will be phased down and/or out. As you get the capability of producing cards in your own shop, I think you'll do that and won't use processing centers. I don't think there are many economies to be realized with processing centers. The commercial jobbers are now doing it for 89¢, and I have to charge $3.75. Networking will be one of the several things that will phase processing centers down and out. There may be a need for a regional processing center that handles the tough one that nobody else can handle, but I don't think the processing centers that were envisioned in the early 60's will ever happen. In fact, they're all in crisis right now. Almost every one of them is going broke in one way or another.

OK, gang; I've told you about national; I've told you about regional; I've told you about state. I'll close off with just a little marketing pitch, since Gil didn't say I couldn't do it, and I'm not just here to tell you about what's going on everywhere. I want you to know that there are a lot of good, newly appointed people at the State Library who are working very hard on this. We hope you people see it as leadership, because we sure as hell are working to provide just that. OK, end of pitch.

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*In *From the State Librarian's Desk*, January 1975, PLAG is called the State Librarian's Committee on Public Library Automation.

* * *

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ALA (Acronyms and Library Automation)
Acronyms and near acronyms--
a list of abbreviations and some definitions
in the field of library automation

AGRIS - International Information System for the Agricultural Sciences and Technology; sponsored by UN Food and Agricultural Organization for pooling of agricultural information and resources on an international basis.

AIM - Abridged Index Medicus.

BALLOTS - Bibliographic Automation of Large Library Operations Using a Time-sharing System. Computerized, on-line technical processing system which supports both acquisitions and cataloging functions at Stanford University.

BIBNET - Bibliographic Network; a commercially available system for obtaining bibliographic records via computer tape and microfiche.

CAIN - Cataloging-Indexing Data Base; project of National Agriculture Library. Contains bibliographic information on agriculture from the NAL book catalog and *Bibliography of Agriculture*, all publications of the Department of Agriculture and reports of research supported by its funds.

CATLINE - Cataloging on-line; data base containing full bibliographic information for all materials cataloged at National Library of Medicine and appearing in the *Current Catalog* since 1965.

CHEMCON - Chemical Abstracts Condensates; data bsse produced by the Chemical Abstracts Service of the American Chemical Society. Contains citations covering literature in all fields of chemistry.

CIJE - Current Index to Journals in Education.

CIM - Cumulated Index Medicus.

COMPENDEX - Computerized Engineering Index. A nationwide on-line retrieval service developed and maintained by Engineering Index, Inc. The worldwide coverage of the engineering literature includes over 3,500 journals and other publications, including conference proceedings.

COMPFILE - Complement File. Computerized search service provided by NLM. Contains remaining 40% of the *Index Medicus* citations for the past 3 years - those not included in MEDLINE. Unlike MEDLINE and the other on-line services, citations retrieved in COMPFILE searches cannot be printed at the terminal on-line but are mailed to the user from the National Library of Medicine within 24 hours.

CONSER - Cooperative Conversion of Serials; the U.S. and Canada are cooperating on this massive serials cataloging project.

CRT - Cathode Ray Tube (TV screen).

DIALOG Information Retrieval Service - A commercial, computerized, on-line service, developed by Lockheed Missile & Space Co., Palo Alto, CA. Currently gives access to 8 scientific and technical data bases, including NTIS, INSPEC, CHEMCON, and COMPENDEX, among others. Six additional data bases are also available: ERIC, Exceptional Children Abstracts, Abstracts of Instructional and Research Materials (AIM/ARM), Psychological Abstracts, ABI/INFORM, and CAIN.

ERIC - Educational Resources Information Center; educational data base developed and maintained by the National Institute of Education. Citations from periodical literature in education and education related fields.

ERIC/CLIS - ERIC Clearinghouse on Library and Information Sciences.

FAUL - Five Associated University Libraries (in New York State); now operating as part of the Ohio College Library Center (OCLC) on-line cataloging system.

GEO-REF - Computerized Geosciences Index; a machine-readable file of citations developed and maintained by the American Geological Institute Corp. AGI provides the scientific community with access to the full citations in some 21 areas of the sciences, including economic geology, geochemistry, marine geology, soils, and structural geology.

IFLA - International Federation of Library Associations.

INFORM - International Reference Service in Forensic Medicine; at St. Francis Hospital, Wichita, Kansas. Developed to disseminate information to forensic practitioners throughout the world. Includes material from all 50 of the world's forensic periodicals, and over 100 agencies in the U.S. and abroad.

ABI/INFORM - A business management data base produced by ABI, Inc., Louisville, Ky. Abstracts 300 journals in the areas of Finance, Management, Economics, Statistics, Business Law and Marketing.

INSPEC - Information service in physics, electrotechnology and control sciences. (Institution of Electrical Engineers). Computerized data base.

INTREX - Info Transfer Experiments (at Massachusetts Institute of Technology). "A systematic program of information transfer experiments directed toward the design of integrated library services that might become available at the Massachusetts Institute of Technology (MIT) and elsewhere this decade." Includes experiments to compare the advantages and disadvantages of various techniques of document storage, selection, transmission, presentation, and reproduction required in a decentralized full-text remote access system.

KWAC - Keyword and Context.

KWIC - Keyword in Context.

KWIT - Keyword in Title.

KWOC - Keyword Out of Context.

KWOT - Keyword Out of Title.

LIBCON - Data base produced by Information Dynamics Corp., Reading, Mass. Includes most of the material in the LC comprehensive catalogs from 1965 to date. In addition, there is wide coverage of foreign language and audio-visual material not in the standard MARC files. 7,000 new items are being added each week. Will eventually include over 3,000,000 citations, some of which will date back to the 1800's or earlier.

MARC - Machine Readable Cataloging; LC project for issuing cataloging information on magnetic tapes.

MARCIVE - MARC Archive; a specially constructed bibliographic data base of extracts from MARC records maintained by Trinity Univ. in San Antonio, Texas.

MARC-O; MARC-Oklahoma; the machine-readable cataloging services available from the Oklahoma Dept. of Libraries.

MATRIX - A highly selective data base covering world developments in communications, environment, and urban affairs. Produced by ORBA Information, Ltd., of Montreal. Emphasis is on material that has implications for policy and planning. Updated monthly with approximately 1,000 new citations from 250 publications - newspapers, newsletters, trade publications and other general publications.

MEDLARS - Medical Literature Analysis and Retrieval System. Computerized file of journal article references from the world's biomedical literature - established at NLM. Network consists of 11 MEDLARS stations and 8 regional medical libraries through which requests are submitted.

MEDLINE - MEDLARS On-line. A computerized search service provided by NLM. Nationwide on-line bibliographic retrieval system which enables the user to search a significant portion (60%) of the MEDLARS files for bibliographic information.

NCLIS - National Commission on Libraries and Information Science.

NTIS - The data base of the National Technical Information Service of the U.S. Dept. of Commerce. Contains citations and abstracts of government sponsored research and development reports. Broad, cross-disciplinary subject coverage.

ORBIT II - On-line Retrieval of Bibliographic Information Time-shared. Developed by System Development Corporation. An interactive information storage and retrieval system designed to operate on the customer's computer. See: SDC Search Service.

RECON - Retrospective Conversion of Cataloging Records; LC project.

SCISEARCH - Data base produced by the Institute for Scientific Information. Covers all editorial items (e.g., journal articles, reviews, editorials) in more than 1,100 of the world's most important life science journals.

SDC Search Service - Commercial service of the System Development Corporation, Santa Monica, CA. On-line interactive literature searching on a number of data bases. Includes IDC/LIBCON, MATRIX, SCISEARCH, COMPENDEX, GEO-REF, ABI/INFORM, CHEMCON, NTIS, CAIN, ERIC and others. Service uses SDC's IBM 370/178 computer, and its ORBIT II retrieval program.

SDI - Selective Dissemination of Information; a current awareness service on specific interest fields.

SDILINE - Selective Dissemination of Information On-line. A computerized search service provided by National Library of Medicine data base contains all citations to the forthcoming printed edition of *Index Medicus*, thereby making available some 18,000 citations to network participants almost one month prior to publication in *Index Medicus*.

SERLINE - Serials On-Line; a computerized search service of National Library of Medicine; a data base of serial records containing bibliographic and locator information for about 5,600 current biomedical serial titles. Using SERLINE, it is possible to identify which specific titles are held by any of 117 participating medical libraries. Used primarily in support of ILL activity.

SPIRES - Stanford Public (nee Physics) Information Retrieval System. Located at Stanford University. Generalized information retrieval system. Provides file management and file access for any kind of data which a user may want to put into the system.

TELEX - Teleprinter Exchange; automatic teletypewriter exchange service.

TOXLINE - Toxicology Information On-line. A computerized search service provided by NLM. Deals primarily with toxicology/pharmacology of drugs, pesticides, environmental pollutants, and hazardous household or industrial chemicals.

TWX - Teletypewriter Exchange Service.

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Compiled by Carol Zajchowski and Anne Roughton
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BRIEF GLOSSARY OF TERMS

RELATING TO COMPUTERS AND LIBRARY COOPERATION

Compiled by
Carol Coon and Audrey Powers
Bay Area Reference Center
December 11 & 12, 1974

This glossary is very brief, and the terms are fairly basic. Most of the definitions were taken from the sources listed at the end of the glossary.

* * *

ACCESS TIME - The interval between a request for data from an input/output device and the time when the data is found and transmission begins.

BINARY - Numbering system based on 2's rather than 10's which uses only the digits 0 and 1 when written.

BIT - Abbreviation of binary digit - a zero or one.

CPU - Central Processing Unit - The controlling part of the computer where arithmetic and logical operations are performed and where control of input/output and execution and interpretation of program instructions, etc. takes place.

COMPATIBILITY - The extent to which one device is capable of accepting and processing data prepared by another.

COMPILER - A program which translates a source program into machine language.

COMPUTER - A device capable of accepting information, applying prescribed processes to information, and supplying the results of these processes. It usually consists of input and output devices, arithmetic, storage, communications units and a control unit. Types of computers: absolute, value, all-purpose, analog, buffered, general-purpose, hybrid, incremental, parallel, second generation, serial, slave, target, and third generation.

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CONSORTIUM - A formal organization of libraries and other organizations, having the same or interrelated service or processing objectives. Term is frequently applied to cooperatives which include academic libraries.

DATA - A general term used to denote any or all facts, numbers, letters, and symbols, that refer to or describe an object, idea, condition, situation, or other factors. It connotes basic elements of information which can be processed or produced by a computer.

DATA BANK - A data base, usually of very large size, intended for many users.

DATA BASE - A file of data in machine language, available for use.

DESCRIPTOR - A significant word that helps to classify the components of a document, subject, concept, or idea.

FEEDBACK - The use of parts or all of the output of a machine, process, or system, as input for another phase, as when used for self-correcting purpose. Such feedback systems or programs use the process of continual comparisons of output with input to make necessary corrections.

FLOWCHART - A chart to represent, for a problem, the flow of data, procedures, growth, equipment, methods, documents, machine instructions, etc. by the use of symbols.

HARD COPY - A printed copy of machine output in a visually readable form.

HARDWARE - The mechanical, magnetic, electrical and electronic devices or components of a computer - cabinets, racks, tubes, transistors, wires, motors, etc. In general, any piece of automatic data-processing equipment.

IMPLEMENTATION - The several steps concerned in installing and starting successful operation of computer systems or related machines. The steps begin with feasibility studies, application studies, equipment selection, systems analysis and design of proposed new system, physical location of equipment, operations analysis, and critical review.

INFORMATION RETRIEVAL - Search of a file of information, on the basis of criteria supplied by a searcher, and presentation, to the searcher, of information in the file that met the criteria.

INPUT - Information or data transferred or to be transferred from an external storage medium into the internal storage of the computer.

INPUT/OUTPUT - Commonly called I/O. A general term for equipment used to communicate with a computer. The process of transmitting information from an external source to the computer or from the computer to an external source.

INTERFACE - The area or mechanism of contact and interaction between any two systems, subsystems or organizations. An interface may be technical (e.g., electronic) or administrative.

INTERLIBRARY COOPERATION - Informal agreements between and among libraries to participate in a specific process or service for mutual benefit.

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INTERTYPE LIBRARY COOPERATION - Informal agreements between different types of libraries (e.g., public, special, academic) to participate in a specific process or service for mutual benefit.

JOB - In computer usage it is a unit of work to be done by the computer. A job is a single entity from the standpoint of computer installation management, but may consist of one or more job steps.

KEYPUNCH - A special device to record information in cards or tape by punching holes in the cards or tape to represent letters, digits, and special characters.

KEYWORD - A significant or informative word in a title, abstract, body, or part of the text that generally is utilized to describe a document. It may describe the contents of a document, label the document, and/or assist in identifying and retrieving the document.

LANGUAGE - A defined character set that is used to form symbols, words, etc., and the rules for combining these into meaningful communications, e.g. ALGOL, PL/1, FORTRAN, general-purpose, machine, problem-oriented, procedure-oriented, higher-order, source, symbolic, and target.

LINKAGE, COMMUNICATIONS - Common-carrier equipment, which is supplied by such companies as American Telephone and Telegraph, Western Union, and American Cable and Radio, provides high-speed communications facilities for two-way transmission of data between the control computer site and remotely located input/output units. Transactions originating at these remote points are conveyed along linkage wires directly to the computer where they are immediately evaluated and processed. Then the result is returned to the originator and other appropriate distant points. The whole transaction is handled in a matter of seconds.

LINKS - Channels of communication that bridge all nodes and through which information may pass from node to node. They make possible the physical sharing and transfer of resources throughout the network and thereby, increase the availability of information to any one user.

MACHINE LANGUAGE - This is the language directly used by the computer. Programs in other languages, such as FORTRAN, COBOL, or ALGOL, have to be translated into machine language before they can be executed.

MEMORY - Synonymous with storage. Any device into which a unit of information can be copied, which will hold this information, and from which the information can be obtained at a later time. Memory types include disk, core, drum, or relay memories.

NETWORK - a) The interconnection of a number of points by communications facilities. b) A structured organization of two or more autonomous libraries and/or other organizations, interconnected through continuing transactions between them for the purpose of achieving some common goal that is more than any one of the units can achieve individually. Libraries may be in different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them.

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NODES - Nodes are loci of information input, output storage, processing, organization, control, and use. They may include organizations and individuals, manual processing and computers, document files and digital data banks as well as films, recordings, and other nonprint media. A node may be a library, editorial office, indexing and abstracting service, information analysis and evaluation center, or any other organizations that make extensive use of information services.

OFF-LINE - Of or indicating such items of peripheral hardware as are not under the direct control of the central processing unit. In teleprocessing, a system that requires human intervention between the original recording functions and the ultimate data processing function, such intervention being necessary in conversion functions as well as in the loading and unloading operations associated with the use of point-to-point or data-gathering systems.

ON-LINE - Descriptive of a system and peripheral equipment or devices in a system in which the operation of such equipment is under the control of the central processing unit. In teleprocessing, a system in which input data enters the computer directly from the point of origin and/or output data is transmitted directly to the point of use.

OUTPUT - Computer results, such as answers to mathematical problems, statistical, analytical or accounting figures, production schedules, etc.

PRINTOUT - An instruction to cause the printing of data in storage or from other external storage media into hard copy.

PROGRAM - A plan for the automatic solution of a problem. A complete program includes plans for the transcription of data, coding for the computer, and plans for the absorption of the result into the system. The list of coded instruction is called a routine. Most programs include alternate steps or routines to take care of variations. Generally, program steps form a complete cycle.

REAL TIME - Relating to the performance of computing during the specific time in which the related process, event, problem, or communication is taking place, i.e., the computing must be fast enough, during the process of the happening of the event for the results of this computing to influence the related process or result.

SOFTWARE - The internal programs or routines professionally prepared to simplify programming and computer operations. These routines permit the programmer to use his own language (English) or mathematics (Algebra) in communicating with the computer.

SORTING - Concerns the process of arranging data into some designed order according to rules dependent upon a key or field contained by each item - numerical, alphabetical, alphmeric, date, code number, etc.

SYSTEM - An assembly of components united by some form of regulated interaction to form an organized whole. A collection of operations and procedures, personnel, and machines, by which business activity is carried on. A system may exist within a library or information activity, or it may exist when two or more library or information activities agree to participate in a common service program utilizing their resources.

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SYSTEM, CLOSED - A system that functions only within itself and does not interface with other systems.

SYSTEM, OPEN - A system which accepts and responds to input from outside the system, and is therefore, somewhat dependent on other systems.

TERMINAL - a) A point at which information can enter or leave a communication network. An input/output device designed to receive data in an environment associated with the job to be performed, and capable of transmitting entries to, and obtaining output from, the system of which it is a part. b) This is a keyboard device similar to a typewriter which is connected to the computer by telephone lines. It allows interactive communication with the computer and full use of its facilities from remote distances. Examples are the Datel, teletype, and IBM Model 2741.

TIME SHARING - A method of using the computer that allows a number of users to execute programs concurrently and to interact with the programs during execution. This is the computing method used by people with terminals.

TURNAROUND TIME - The ellapsed time from submitting a job until the output is returned. This can vary greatly depending on how many other jobs are in the system, if there are any system problems, etc.

* * *

A FEW USEFUL SOURCES ON COMPUTER TERMINOLOGY AND USES IN LIBRARIES

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Sippl, Charles J. and Charles P. *Computer Dictionary and Handbook.* Howard W. Sams & Co., 1972.
This dictionary and handbook will be useful to everyone who has any type of contact with the computer in data processing, information retrieval, scientific research, or in utilization of computer skills in scores of other computer applications.

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LIBRARIANS AND THEIR CALIFORNIA DREAM
California Library Systems and Networks
Yesterday and Today

Compiled by Anne Roughton, BARC

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Kenney, Louis A. "San Diego Libraries Consort," *California Librarian*, Vol. 34, No. 3, July 1973, pp.28-30.
History of the San Diego Library Metro.

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One of the pioneers.

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Another pioneer. History of NBC, 1960-1963.

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Wynn, Barbara L. "Information Unlimited! The story of the San Joaquin Valley Information Service...a successful reference demonstration," *News Notes of California Libraries*, Vol. 58, No. 3, Summer 1963, pp.315-34.
Detailed history of the early years, 1959-1963.

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Alfred W. Baxter, Jr. and Associates. *The Costs of Cooperation: a program for the measurement and adjustment of service imbalances among cooperative libraries in San Mateo County.* Prepared for the Office of the County Manager, the San Mateo County Library and the City Libraries of Burlingame, Daly City, Menlo Park, Redwood City, San Bruno and San Mateo. Berkeley, CA, 1969. 34pp.

Boaz, Martha. *Strength Through Cooperation in Southern California Libraries: a survey.* Los Angeles, 1965.

California. Department of Finance. Audits Division. Program Review Branch. *Library Cooperation: a systems approach to interinstitutional resource utilization.* Sacramento, 1973. 75pp.
A controversial report. G. Edward Evans is quite critical of it in his "Analysis," *California Librarian*, Vol. 34, No. 2, April 1973, pp.4-15.

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"The California Library Network. A Master Plan," *CLA Newsletter*, Vol. 13, No. 12, Dec. 1971.
This latest Master Plan was an outgrowth of the 1967 and 1969 Master Plans.

Coolidge, Coit and Edward A. Wight. *Planning for Public Library Service in the San Francisco Bay Area.* Prepared for the Public Library Executives of Central California. Berkeley, 1963.

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Important statewide study.

Preston, Katherine H. *Reference Service to Meet Community Needs: a survey of the reference resources and services of the metropolitan cooperative library system.* Pasadena, 1970.
Well done, readable report.

Swank, Raynard C. *Interlibrary Cooperation under Title III of the LSCA: a preliminary study for the California State Library.* Sacramento?, 1967. 68pp.

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Includes summary of how LSCA funds were used to establish library systems in California.

CALIFORNIA PUBLIC LIBRARY SYSTEMS
(System followed by counties or cities served)

Berkeley-Oakland Service System (BOSS): Berkeley, Oakland.

Black Gold Cooperative Library System: San Luis Obispo County, Santa Barbara County, Ventura County.

*Camino Real Library System: San Jose, Santa Clara, Sunnyvale.

East Bay Cooperative Library System (EBC): Alameda County, Contra Costa County.

49-99 Cooperative Library System (49-99): Amador County, Calaveras County, Mariposa County, Merced County, San Joaquin County, Stanislaus County, Tuolumne County.

*Camino Real Library System together with Santa Clara Valley Library System currently form SBARN (South Bay Area Reference Network). However, as of July 1, 1975, the Santa Clara Valley Library System and the Camino Real Library System will cease to exist as separate entities, and the South Bay Cooperative Library System will come into existence, replacing SBARN.

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Inland Library System: Inyo County, Riverside County, San Bernardino County.

Kern County Library System: Kern County.

Long Beach Public Library System: Long Beach.

Los Angeles County Public Library System: Los Angeles County.

Los Angeles Public Library System: Los Angeles.

Metropolitan Cooperative Library System (METRO): Los Angeles County.

Monterey Bay Area Cooperative Library System (MOBAC): Monterey County, Santa Cruz County.

Mountain-Valley Library System: Alpine County, El Dorado County, Nevada County, Placer County, Sacramento County, Sutter County, Yolo County, Yuba County.

North Bay Cooperative Library System (NBC): Lake County, Marin County, Mendocino County, Napa County, Solano County, Sonoma County.

North State Cooperative Library System: Butte County, Colusa County, Del Norte County, Glenn County, Humboldt County, Lassen County, Modoc County, Plumas County, Shasta County, Sierra County, Siskiyou County, Tehama County, Trinity County.

Peninsula Library System (PLS): San Mateo County.

San Francisco Public Library System: San Francisco City and County.

San Joaquin Valley Library System: Fresno County, Kings County, Madera County, Tulare County.

*Santa Clara Valley Library System: Santa Clara County.

Santiago Library System: Orange County.

Serra Library System: San Diego County, Imperial County.

(For information on member libraries, administrators, addresses and phone numbers for each system see: "Directory of California Library Systems," *News Notes of California Libraries*, Vol. 69, No. 1, Winter 1974, pp.232-233.)

SOME OF CALIFORNIA'S NETWORKS, RESOURCE CENTERS, AUTOMATION PROGRAMS, STATE PLANNING COMMITTEES, ETC.

AWLNET - Area Wide Library Network. New network which will cover same area as the San Joaquin Valley Library System.

BARC - Bay Area Reference Center. SFPL. (We're called a Regional Resource Center.)

*See * p.

BIBLIOS - Book Inventory Building Library Information Oriented System, Orange County Public Library. Designed to fulfill all functional requirements of a multi-branch library which is growing by leaps and bounds. Specifically, these functional requirements are acquisitions, book processing, catalog maintenance, circulation control, and book fund accounting, in addition to management reporting on a level not practical in a manual system.

CALINET - The California Institute of Technology, the University of California at Los Angeles and the University of Southern California have recently formed a network to share their library facilities. CALINET is believed to be the nation's first attempt at sharing library resources between major private and public universities. Faculty members and graduate students will have complete access to library materials and resources on the three campuses. Undergraduate students are not yet included, but they have not been ruled out for consideration as the project expands.

Central Association of Libraries - An intertype library network under the aegis of the 49-99 Cooperative Library System. Started in 1971. Covers same area as 49-99 System. Includes all types of libraries.

CIN - Cooperative Information Network. Stanford University. Library network started in 1972. Covers San Mateo, Santa Clara, Santa Cruz and Monterey Counties. All types of libraries included.

Congress of California Public Library Systems.- Group composed of the directors of each library within a PLSA System, plus the State Librarian. Its executive body is the Systems Council, made up of representatives from each system. According to its by-laws, the purposes of the Congress are to assist the CSL in the formation of long-range plans and financial support for total library service; to exchange information about new cooperative ventures; and to encourage innovative solutions to problems of cooperative structure and funding.

FACT - Future Automation Cooperation Task Force. An attempt to reach a consensus among technical processing librarians in the Bay Area respecting the following: 1. Bibliographic format and content. 2. Search keys. 3. Institutional designations. 4. Shared cataloging. Primary concern is to avoid going in different directions, to insure a level of bibliographic coverage, to promote area wide planning and coordination.

INFO - Information Center for Southern California Libraries. Los Angeles Public Library. An affiliate of SCAN. Clearinghouse for information on access to the resources of libraries and research facilities in Southern California.

Intersegmental Task Force - Set up to explore cooperative library planning between the academic and public library sector. Topics discussed include automation, union listings and cooperative cataloging. Includes representatives from: the University of California, the California State Universities and Colleges, Public Libraries as represented by the Los Angeles Public Library, the CSL, SLA, the Association of Independent California Colleges and Universities, community colleges, the Post-Secondary Education Commission, etc.

Library Planning Institute.- This Institute, sponsored by the CSL, will be held June 23-27, 1975. It is being partially funded by a training grant under HEA Title II B. One hundred librarians, trustees, Friends and local government officers will review the final report of the PMM Study and carry out planning for future urban and rural library developments in the state.

NCLIS Advisory Committee - At the request of Dr. Frederick Burkhardt, president of NCLIS, the CSL has recommended a number of Californians representing labor, industry, business, local government and laymen to be advisors to the National Commission. This will assure good state representation at the White House Conference on Libraries, planned for 1977. Gov. Brown will be asked for his suggestions.

PLAN - Public Library Automation Network. Includes those libraries to be most involved in an LSCA demonstration project test of Stanford's BALLOTS computer program for bibliographic control. The libraries are Butte County, Los Angeles County, Los Angeles Public, Marin County, Orange County, San Francisco Public and Santa Clara County.

PMM Study - Peat, Marwick, Mitchell & Co. Study (Comprehensive Review of Public Libraries System Development in California). This study was commissioned by the CSL in the spring of 1974. Its purpose is threefold: (1) to evaluate California's public library systems as established under the Public Library Services Act; (2) to propose structures for development of public library service in California over the coming decade; (3) to determine the optimum funding formula or allocation system for PLSA. The cost of the study is $191,415. It should be finished by spring 1975.

PSRMLS - Pacific Southwest Regional Medical Library Service. UCLA Biomedical Library. Part of nation-wide Biomedical Communications Network sponsored by the National Library of Medicine. Serves Arizona, California, Hawaii, and Nevada. All health related institutions (public or private) in region are able to use resources.

San Diego Greater Metropolitan Area Library Council (referred to as the San Diego Library Metro). "Formed to promote cooperation and coordination of library collections and services to meet the informational and cultural needs of all individuals and organizations in San Diego and Imperial counties." Includes all types of libraries.

SCAN - Southern California Answering Network. Los Angeles Public Library. One of California's two regional resource centers. Has the same function as BARC.

State Librarians Committee on Public Library Automation - Representatives from libraries involved in, or actively planning for, automation programs were invited to a meeting at the Sacramento airport in August 1974 to create a forum for discussion of mutual problems. Particular emphasis was placed on trying to develop compatible automation programs which will interface one with another, aiming toward formation of a California Library Network. Two offshoots of this group have developed: PLAN (Public Library Automation Network) and a training committee (The WICHE 5).

TIE - Total Interlibrary Exchange. Santa Barbara Public Library. Library network which grew out of the Black Gold System. Covers Santa Barbara, Ventura and Kern Counties. Includes all types of libraries.

UC-ULAP - University-wide Library Automation Program. University of California, Berkeley. Project goals: to improve access to the common pool of bibliographic resources on UC campuses; to standardize bibliographic records, and to promote cooperation and joint development activities.

WICHE 5 - The unofficial name of a training committee composed of the 5 librarians who attended a WICHE training seminar on networking. They are developing a training program in California to foster and expand intrastate and interstate library cooperation and resource sharing through networking.

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LIBRARY NETWORKS AND COOPERATION

THE NATIONAL SCENE

SOME HANDLES

Becker, Joseph, ed. *Interlibrary Communications and Information Networks.* ALA, Chicago, 1971. $15.
Proceedings of a conference held in 1970. Aim - to explore and study the implications that would follow if a network of libraries and information centers were established in the United States.

Brawner, Lee. "Libraries and Information Networks", *Oklahoma Librarian*, V.23,#3, July 1973, p.12+
A short, very readable view of the network concept.

Clemmer, Dan and Russell Shank. "Library and Information Networks", *The Bowker Annual*, 1972. p.90-95.
A survey of activity in 1971 and later Annuals provide one more source for keeping up.

Cuadra, Carlos, ed. *Annual Review of Information Science and Technology.* V.8, 1973. American Society for Information Science, Washington, D.C.
"Consortia and Networks" in Chapter 5 on Library Automation; see pages 180-182 for year's overview.

DeLanoy, Diana and Carlos Cuadra, eds. *Directory of Academic Library Consortia.* System Development Corp., Santa Monica, 1972.
Good way to get a line on academic networks. Gives purpose, objectives, current activities, projected activities, publications.

-------. *Supplement to the Directory of Academic Library Consortia.* System Development Corp., Santa Monica, Oct. 1972.
Identifies and describes a wide range of library consortia, cooperatives, and networks not included in the Directory.

Encyclopedia of Information Systems and Services. 2d ed. Anthony T. Kruzas Assoc., 1974 (Edwards Brothers, 2500 S. State St., Ann Arbor, Mich.)
"An international guide to Information Storage & Retrieval Systems, Computerized Data Bases, SDI Service, Data Base Publishers, Clearinghouses & Information Centers, Library and Information Networks, Data Collection & Analysis Centers, Micrographic Systems & Services, and Consulting and Research and Coordinating Agencies." Phew!

Goldstein, Seth and Martin R. Miller. *Library Networks '74-'75.* Knowledge Industry Publications, Inc., White Plains, N.Y., 1974. 109p. $26.
A good place to begin. General discussion of network concept. Selected list of major networks.

"Intertype Library Cooperation", *Illinois Libraries*, V.54,#5, May 1972.
Issue devoted to the concept with concentration on Illinois experiments.

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Kilgour, Frederick. "Library Networks", *Networks and Disciplines*, Proceedings of EDUCOM Fall Conference October 11-12-13, 1972. EDUCOM, P.O. Box 364, Princeton, N.J. $6. p.38-41, 71-75.
Get ready for "interinstitutional cooperation" through computer networking - a developmental goal of EDUCOM (Educational Communications) - a national consortium of institutes of higher education.

"A National Program for Library and Information Services." 2d draft (rev.) Prepared by the National Commission on Libraries and Information Science. Sept. 15, 1974. Washington, D.C. Superintendent of Documents, U.S. Gov't. Printing Office, Washington, D.C. 20402. $1.50.
A program founded on the belief that "the profession is prepared and is ready to advance traditional librarianship, to apply computer and communication technology, and to work together in creating the strongest possible information services for the country."

Network; international communications in library automation. V.1,#1, Jan. 1974- . LARC Press, Ltd., Dept. 24, 105-117 W. Fourth Ave., Peoria, IL 61602. $24/yr.
New - The Official Journal of the Association for Library Automation Research Communications. An attempt to keep abreast of the extremely rapid upsurge of the flow of information activities relating for library automation. International emphasis.

"Network Nodes", *Illinois Libraries*, V.55,#5, May 1973.
Entire issue devoted to networks - a super survey. Articles on SLICE, PNBC, WICHE, METRO, TIE.

Stenstrom, Ralph H. *Cooperation Between Types of Libraries 1940-1968; an annotated bibliography.* ALA, 1970. $4 paper.
Objective - to compile the literature relating to cooperation between different types of libraries rather than to make any systematic analysis of the kinds of cooperation in process. Material deals with cooperation involving more than one type of library and the description must be of programs in actual operation. The handiest of handles.

Supplements

Gilluly, Maureen and Lucille Wert. "Cooperation Between Types of Libraries; an annotated bibliography 1969-1971", *Illinois Libraries*, 54:385-400, May 1972.

Palmini, Cathleen. "Cooperation Between Types of Libraries; an annotated bibliography 1971-1972", *Illinois Libraries*, 55:358-69, May 1973.

SOME NETWORKS

CORAL - Council of Research & Academic Libraries. Information Source: Brother Paul Novosal, S.M., Director of Libraries, St. Mary's Univ. 2700 Cincinnati Ave., San Antonio, Texas 78228. Sixteen cooperating libraries serving the greater San Antonio area - including public, special, academic, hospital and Air Force. Projects include union catalog, ILL, reciprocal borrowing, and personnel training.

IUC - Inter-University Council of the North Texas Area, P.O. Box 30365, Dallas, Texas 75230. Established in 1964 to provide library services to 14 member libraries. Services provided include extensive interinstitutional library loans, private interinstitutional teletype system among a majority of IUC libraries, daily courier service, and duplicate exchange. IUC is currently completing an agreement with OCLC for leased telephone interconnection to OCLC computer-based cataloging.

METRO - New York Metropolitan Reference and Research Library Agency, 11 W. 40th St., New York, N.Y. 10018. Established to improve reference and research library services in the New York Metropolitan Area. Now numbers some 63 members including public, academic, private and quasi-public special libraries.

MINITEX - Minnesota Interlibrary Teletype Exchange, Wilson Library, University of Minnesota, Minneapolis, Minn. 55455. A large group of public and academic libraries working to meet patron needs by regional sharing of resources and by access to the University's extensive collection.

NELINET - New England Library Information Network, New England Board of Higher Education, 20 Walnut St., Wellesley, Mass. 02181. A regional system designed to provide academic and public libraries of New England, without regard to size, with computer-aided support services.

OCLC - Ohio College Library Center, 1314 Kinnear Road, Columbus, Ohio 43212. One of the most active of the computer-based networks. Offers to its members on-line access to both local input and MARC derived cataloging information; on-line location of materials for ILL and on-line training sessions for catalogers. Serves 240 libraries. For information call their toll free phone number: 800-848-0350.

OTIS - Oklahoma Teletype Interlibrary System, Oklahoma Department of Libraries, P.O. Box 53344, 109 State Capitol, Oklahoma City, OK 73105. Established in 1968 - to provide any library in the state with improved access to library resources.

PALINET - Pennsylvania Area Library Network, Offices of the Union Library Catalogue of Pennsylvania, Philadelphia, PA. Serves 50 libraries with OCLC and other cooperative programs.

PNBC - Pacific Northwest Bibliographic Center, Rm. 253, Suzzallo Library, Univ. of Washington, Seattle, Wash. 98105. A switching center through which libraries of all types in a geographical region composed of Alaska, British Columbia, Idaho, Montana, Oregon and Washington share their resources via interlibrary loan.

PRLC - Pittsburgh Regional Library Center, Inc., Beatty Hall, Chatham College, Pittsburgh, PA 15232. Established in 1967 to promote library services, to advance library science, and to encourage interlibrary cooperation among public and private libraries in Pittsburgh and the surrounding areas.

SALINET - Satellite Library Information Network. Project designed to experiment in the extension of library services to sparsely populated regions of the 12 Rocky Mountain and Northern Plains states via communications satellite to be launched by NASA in 1975. Goals include: 1) improving individual and organization capacities for getting information; 2) demonstrating and testing cost effectiveness in using technological advances to disseminate information; 3) developing user "markets" for information utilizing satellite distribution.

SLICE - Southwestern Library Interstate Cooperative Endeavor, 7371 Paldao Dr., Dallas, Texas 75240. A project designed to determine the feasibility of sharing library resources, personnel and expertise in a six state area - Arizona, Arkansas, Louisiana, New Mexico, Oklahoma, Texas. Among its goals - to demonstrate the concept of interstate cooperation and to establish a project concerned with continuing education of librarians in the Southwest.

SOLINET - Southeastern Library Network, Atlanta, GA. Includes 99 academic and public libraries in 10 Southeastern states; plans to acquire electronic data processing and telecommunications equipment to improve access to bibliographic information and resources. As an interim step to establishing its own computer center in Atlanta, SOLINET plans a tie-in arrangement with OCLC in Columbus.

TALON - The South Central Regional Medical Library Program for Texas, Arkansas, Louisiana, Oklahoma, and New Mexico, Univ. of Texas, Health Science Center Library, 5323 Harry Hines Blvd., Dallas, Texas 75235. Part of the Regional Medical Library Network - a national program covering 11 regions in the U.S. Purpose - to improve access to superior health information for those health professionals who are far from library resource centers. PSRMLS (Region 11) is the Pacific Southwest Region (University of California, Center for Health Sciences, Los Angeles, CA 90024), covering California.

WICHE - Western Interstate Commission for Higher Education, P.O. Drawer P, Boulder, Colo. 80302. A multi-state consortium for continuing education programs, which in 1972 began a project to establish a continuing education program for library personnel. WICHE is currently overseeing the proposed creation of a Western Regional Library Network, which would include 17 states.

* * *

Compiled by Sandra Drissen, BARC

HIAWATHA'S NETWORK

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By the shores of Airlie House pond
In the hillsides of Virginia
Met a group of data experts,
Experts in the use of knowledge.

Working through the mists of evening,
Toiling in the late Fall sunshine,
Striving to define a network
And create a plan for action.

Said their leader, "Who will use it?
How will they input their questions?
Will there be a master center
Which will gather all the data?

Is technology developed
That can do the things demanded?
Must machines still be invented
Which can tie the parts together?"

Into groups they were divided,
So as to approach the problems
But their purposes collided
As they groped toward solutions.

Long they labored, argued, reasoned,
Tried to bring about consensus,
Tried to find a mode of action
Which would be quite universal.

Hiawatha came upon them
At the endpoint of their struggle
As they wrestled with their charges
Looking for the higher vision.

Their conclusions were quite startling!!!
People are of key importance.

Networks are indeed required.
Duplication is anathema.

Hiawatha nodded sagely
As he listened with attention.
And he marveled at their wisdom
Bringing order out of chaos.

And he said, "Your basic findings
Are so vital to all persons
That I will assist the telling
Of your plans and hopes and goals."

Strode he to the highest hillside,
Gathered wood and lit a fire.
Taking off his thick, warm blanket
He sent forth a coded message.

Thus it reached throughout his nation
And the others got the message.
Networks are the coming fashion.
Let us join and shout HOSANNAH!

As they wended homeward, weary,
From the site at which they pondered,
All the people had the feeling
They had from the topic wandered.

And they hoped that the *Proceedings*
Stenocomp would later issue
Could make sense from all their sayings
Make of the truth a tissue.

So the end was the beginning
Of a networks formulation
With the nations' users winning
New control of information.

This fine poem was written in 1970 by Irwin H. Pizer, Director, Library of the SUNY Upstate Medical Center, to celebrate the end of the Conference on Interlibrary Communications and Information Networks, sponsored by ALA and the U.S. Office of Education, held at Warrenton, Virginia, September 28, 1970-October 2, 1970.